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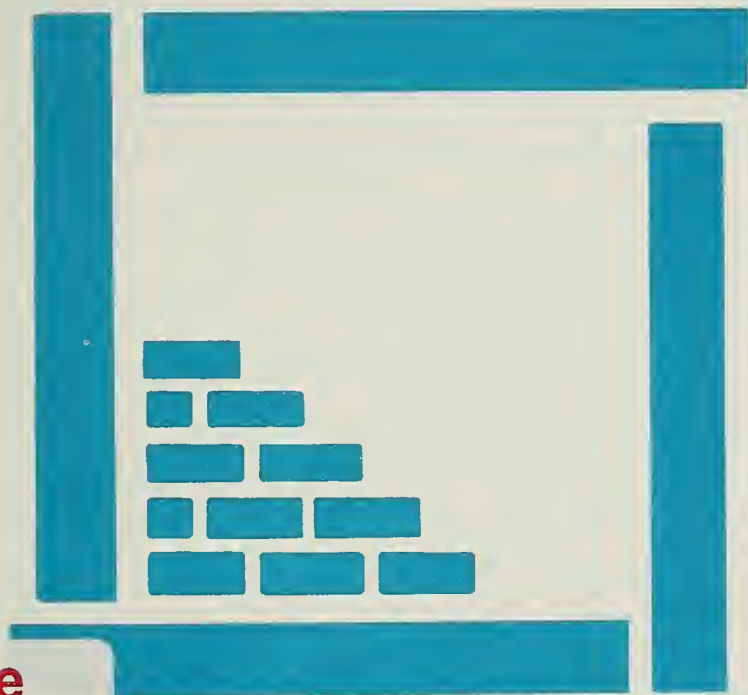
# Census of Construction Industries

CC87-I-10

INDUSTRY SERIES

Plumbing, Heating,  
and Air-Conditioning  
Special Trade Contractors

Industry 1711



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# ACKNOWLEDGMENTS

Many persons participated in the various activities of the 1987 Census of Construction Industries.

The overall planning and review of the census operations were performed by the staff of the Office of the Assistant Director for Economic and Agriculture Censuses.

This report was prepared in the Construction Statistics Division. **Barry A. Rappaport**, Assistant Division Chief for Industry Surveys, was responsible for the overall planning, management, and coordination of the census of construction industries. Planning and implementation were under the direction of **A. William Visnansky**, Chief, Census Operations Branch, with primary staff assistance by **Juliana Van Berkum**, **Barbara J. Hadden**, **Edward R. Glover**, **Susan L. Hostetter**, **Shirley M. Baker**, and **Carolyn J. Stone**. Under the direction of **Jesse Pollock**, **Edward K. Ricketts** and **Dennis K. Duke** developed the sampling plans and variance and estimation specifications.

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Special acknowledgment is also due the many businesses whose cooperation has contributed to the publication of these data.

If you have any questions concerning the statistics in this report, call (301) 763-7546.

# **1987**

# **Census of Construction Industries**

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INDUSTRY SERIES

## **Plumbing, Heating, and Air-Conditioning Special Trade Contractors**

Industry 1711

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Issued January 1990



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## PURPOSE AND USES OF THE ECONOMIC CENSUSES

The economic censuses are the major source of facts about the structure and functioning of the Nation's economy. They provide essential information for government, business, industry, and the general public.

*Economic censuses furnish an important part of the framework for such composite measures as the gross national product, input-output measures, production and price indexes, and other statistical series that measure short-term changes in economic conditions.*

*Policy-making agencies of the Federal Government use the data, especially in monitoring economic activity and providing assistance to business.*

*State and local governments use the data to assess business activities and tax bases within their jurisdictions and to develop programs to attract business.*

*Trade associations study trends in their own and competing industries, and keep their members informed of market changes.*

*Individual businesses use the data to locate potential markets and to analyze their own production and sales performance relative to industry or area averages.*

## AUTHORITY AND SCOPE

Title 13 of the United States Code (sections 131, 191, and 224) directs the Census Bureau to take the economic censuses every 5 years, covering years ending in 2 and 7. The 1987 Economic Censuses consist of the—

- Census of Retail Trade
- Census of Wholesale Trade
- Census of Service Industries
- Census of Transportation
- Census of Manufactures
- Census of Mineral Industries
- Census of Construction Industries

Special programs also cover enterprise statistics and minority-owned and women-owned businesses. (The 1987 Census of Agriculture and 1987 Census of Governments are conducted separately.) The next economic censuses are scheduled to be taken in 1993 covering the year 1992.

## AVAILABILITY OF THE DATA

The results of each of the economic censuses are available in printed reports, for sale by the U.S. Government Printing Office, and on microfiche, computer tape, compact discs with read-only memory, and flexible diskettes, for sale by the Census Bureau. Order forms for all types of products are available on request from Customer Services, Census Bureau, Washington, DC 20233. A more complete description of publications being issued from this census is on the inside back cover of this document.

Census facts are also widely disseminated by trade associations, business journals, and newspapers. Volumes containing census statistics are available in most major public and college libraries. Finally, State Data Centers in every State and Business and Industry Data Centers in many States also supply economic census statistics.

## WHAT'S NEW IN 1987

Several changes have taken place for the 1987 censuses. Data will be reported on the basis of the newly revised Standard Industrial Classification (SIC) system with selected reports including "bridge tables," linking the old and new classification systems. A new set of metropolitan



areas has been adopted, and more detailed information will be available for businesses with no paid employees. For additional information on these changes, review the subsequent text.

One important change involves receipts of contractors and builders. Prior to 1987, the Census of Construction Industries collected receipts as the primary measure of construction activity. For 1987, the census collected the "value of construction work done" to better measure actual construction activity done during the year. Differences between the two concepts occur when work is done in one year and payment received either from the prior or in the succeeding year. In addition, receipts do not include work a contractor performs for its own account and use.

## **HISTORICAL INFORMATION**

The economic censuses have been taken together as an integrated program at 5-year intervals since 1967, and before that for 1963, 1958, and 1954. Prior to that time, the individual censuses were taken separately at varying intervals.

The economic censuses trace their beginnings to the 1810 Decennial Census, when questions on manufacturing were included with those for population. Coverage of economic activities was expanded for 1840 and subsequent censuses to include mining and some commercial activities. In 1902, Congress established a permanent Census Bureau and directed that a census of manufactures be taken every 5 years. The 1905 manufactures census was the first time a census was taken apart from the regular every-10-year population census.

The first census of business was taken in 1930, covering 1929. Initially it covered retail and wholesale trade, and construction industries, but it was broadened in 1933 to include some of the service trades.

The 1954 economic censuses were the first to be fully integrated—providing comparable census data across economic sectors, using consistent time periods, concepts, definitions, classifications, and reporting units. These were the first censuses to be taken by mail, using lists of firms provided by the administrative records of other federal agencies. Since 1963, administrative records have also been used to provide basic statistics as well for very small firms, reducing or eliminating the need to send them census questionnaires. The Enterprise Statistics Program, which publishes combined data from the economic censuses, was made possible with the implementation of the integrated census program in 1954.

The range of industries covered in the economic censuses has continued to expand. The Census of Construction Industries began on a regular basis in 1967, and the scope of service industries was broadened in 1967, 1977, and 1987. The Census of Transportation began in 1963 as a set of surveys covering travel, transportation of commodities, and trucks. New for 1987 are publications reporting on business establishments engaged in several transportation industries, paralleling the data on establishments in

other sectors. This is part of a gradual expansion in coverage of industries previously subjected to government regulation. The Survey of Minority-Owned Business Enterprises was first conducted as a special project in 1969 and was incorporated into the economic censuses in 1972 along with the Survey of Women-Owned Businesses.

Economic censuses have also been taken in Puerto Rico since 1909, in the Virgin Islands and Guam since 1958, and in the Northern Mariana Islands since 1982.

Statistical reports from the 1982 and earlier censuses provide historical figures for the study of long-term time series, and are available in some large libraries. All of the census data published since 1967 are still available for sale on microfiche from the Census Bureau.

## **AVAILABILITY OF MORE FREQUENT ECONOMIC DATA**

While the censuses provide complete enumerations every 5 years, there are many needs for more frequent data as well. The Census Bureau conducts a number of monthly, quarterly, and annual surveys, the results of which appear in publication series such as *Current Construction Reports* (building permits, housing starts, and value of new construction put in place), *Current Business Reports* (retail and wholesale trade and service industries), the *Annual Survey of Manufactures*, *Current Industrial Reports*, and the *Quarterly Financial Report*. Most of these surveys, while providing more frequent observations, yield less kind-of-business and geographic detail than the censuses. The *County Business Patterns* program offers annual statistics on the number of establishments, employment, and payroll classified by industry within each county.

## **SOURCES FOR MORE INFORMATION**

More information about the scope, coverage, classification system, data items, and publications for each of the economic censuses and related surveys is published in the *Guide to the 1987 Economic Censuses and Related Statistics*. More information on the methodology, procedures, and history of the censuses will be published in the *History of the 1987 Economic Censuses*. Contact Customer Services for information on availability.

## **CENSUS OF CONSTRUCTION INDUSTRIES—SCOPE AND CLASSIFICATION**

The 1987 Census of Construction Industries covers all employer establishments (establishments with payroll) primarily engaged in contract construction, construction on their own account for sale, or in subdividing real property



into lots as defined in the 1987 Standard Industrial Classification (SIC) Manual.<sup>1</sup> This industrial classification system has been developed by experts on classification in government and private industry under the guidance of the Office of Management and Budget and is in general use among government agencies and among organizations outside the government.

**Contract construction**—The SIC manual defines construction in three broad types of activity that follow:

1. **Building construction by general contractors or by operative builders**—General building contractors are primarily engaged in the construction of dwellings, office buildings, stores, farm buildings, and other building projects. Operative builders who build on their own account for sale are also included here. However, investment builders who build structures on their own account for rent are classified in Real Estate.
2. **Heavy construction general contractors**—Heavy construction general contractors are primarily engaged in the construction of highways, bridges, pipelines, sewers and water lines, marine construction, power, and petro-chemical plants and other nonbuilding construction projects. Special trade contractors are classified in heavy construction if they are specifically engaged in the following activities: grading for highway and airport runways; guardrail construction; installation of highway signs; asphalt and concrete construction of roads, highways, streets and public sidewalks; trenching, cable laying; conduit construction; underwater rock removal; pipeline wrapping; or land clearing and leveling.
3. **Construction by other special trade contractors**—These contractors include plumbers, painters, carpenters, electricians, brick layers, roofers, etc. For the most part, they perform their work at the site of construction, although they may also have shops where they perform work incidental to the job site.

General contractors in both the building and the heavy construction field usually assume responsibility for an entire construction project, but may subcontract to others all of the actual construction work or those portions of the project requiring special skills or equipment. Special trade contractors may work for general contractors, for other subcontractors, or may work directly for the owner of the property.

In addition to the industries classified in the SIC manual as Construction, this census also includes one industry

classified in the Real Estate area, SIC 6552, Land Subdividers and Developers, Except Cemeteries. These establishments are engaged in subdividing real property into lots and in developing it for sale on their own account.

Each establishment receiving a questionnaire was requested to report the percent of total dollar value of business done for each kind-of-business activity engaged in during 1987. This information was used for the computer assignment of appropriate industry classifications. During this work, various tests were also made using other data reported on the questionnaire. The proportion of construction work to total business was checked to verify that the establishment was primarily in construction. Also taken into consideration were the types of structures worked on during the year and the extent of work undertaken for other contractors.

Construction establishments often engage in various construction activities. It is necessary, however, to assign a single industry code to the establishment based on its major activity. Therefore, the statistics shown for an industry reflect not only the primary activity of the establishments in the industry, but also their secondary activities. The industry reports, however, do present data on the extent of secondary activities.

A revised edition of the SIC Manual was issued in 1987. Minor modifications were made to three industries in the construction sector: SIC 1611, Highway and Street Construction Contractors, Except Elevated Highways; SIC 1629, Heavy Construction Contractors, N.E.C.; and SIC 1771, Concrete Work Special Trade Contractors. The extent of these modifications are explained in the specific texts for those industries. "Bridge tables" are also included showing selected data tabulated using both the previous classification system and the 1987 revision.

## ESTABLISHMENT BASIS OF REPORTING

The census of construction industries is conducted on an establishment basis. A "construction establishment" is defined as a relatively permanent office or other place of business where the usual business activities related to construction are conducted. With some exceptions, a relatively permanent office is one which has been established for the management of more than one project or job and which is expected to be maintained on a continuing basis. Such "establishment" activities include, but are not limited to estimating, bidding, purchasing, supervising, and operation of the actual construction work being conducted at one or more construction sites. Separate construction reports were not required for each project or construction site.

Companies with more than one construction establishment were required to submit a separate report for each such establishment operated during all or any part of 1987. The census of construction industries figures represent a summary of records for individual establishments rather than for companies. The census tabulations, therefore, differ from those prepared on a company basis.

<sup>1</sup>Standard Industrial Classification Manual: 1987. For sale by Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402. Stock No. 041-001-00314-2.



If an establishment engaged in construction and one or more distinctly different lines of economic activity (wholesale or retail trade, service, manufacturing, mining, etc.) at the same place of business, it was requested to file a separate report appropriate to each activity, provided that the activity was of substantial size and separate records were maintained or substantially accurate estimates could be prepared.

If a separate establishment report could not be prepared for each activity, then a construction report was requested covering all activities of that establishment providing that the 1987 value of construction work exceeded the gross receipts from each of its other activities.

Construction businesses with no payroll during 1987 (nonemployers) were not required to file census reports. Tabulation of data for these businesses are based on administrative records and are shown only in U.S. summary publications and the geographic area reports series. Refer to the section on "Sample Design" for details. Foreign construction activities were not included in this census.

## **SAMPLE DESIGN, ESTIMATION PROCEDURES, AND RELIABILITY OF ESTIMATES**

The companies included in the 1987 Census of Construction Industries were identified as part of an operation common to all 1987 Economic Censuses. Construction companies were divided into employers (companies with payroll) and nonemployers (companies without payroll). Statistical information for the employers was obtained in the census by a survey which included all medium size and large employers and a sample of the smaller ones. Census reports were not required from the nonemployers. Statistics on them were obtained from administrative records of other agencies of the Federal Government.

### **Employer Companies**

**Developing the sampling frame for employer companies**—This operation started with obtaining a list of all construction companies in the active records of the Internal Revenue Service (IRS) which were subject to payment of Federal Insurance Contributions Act taxes. The basic source for this list has been the Internal Revenue Service Business Master File, a comprehensive list of companies engaged in business activities in the United States. The file contains the name, address, and form of ownership of each company and also indicates whether or not the company is subject to the FICA. Each company in this file is assigned a unique employer identification (EI) number which it uses in filing its various reports with the IRS. The Social Security Administration (SSA) maintains a similar list using the same identification numbers, which also contains information on the industrial classification of each company. The Bureau of the Census obtained both of these lists and combined them.

Under special arrangements which safeguarded the confidentiality of the information, the Bureau also obtained administrative records data on payrolls and receipts and added these data to the combined list. The list, thus created from the IRS-SSA information, was a list of employer companies. However, for the 1987 Economic Censuses the basic reporting unit is the "establishment." Therefore, steps were taken to identify the individual establishments of those companies which operate more than one place of business. The information for making this determination was obtained by means of the Company Organization Survey (COS), an annual canvass of all known multiestablishment companies and large single-establishment companies. Thus, the 1987 Economic Census list for single-establishment employer companies was obtained from the IRS-SSA, but the list of establishments of multiestablishment employer companies was obtained directly from those companies in the COS. Refer to the section on "Establishment Basis for Reporting" for details.

In general, the IRS-SSA list provided sufficient industrial classification data to assign a company to the proper economic census, but there were a number of companies for which this information was inadequate or unavailable. A special form, NC-9923, General Schedule, was mailed to all such companies, requesting information on the nature of the company's activities. From the information reported, the company was given an industrial classification code and assigned to the appropriate economic census. Since construction companies found in this way were identified only after the regular census mailing had taken place, they were treated as a supplement to the basic list.

**Selecting the employer sample**—The sample was designed to provide reliable State and metropolitan area estimates for each construction industry. It consisted of all construction establishments in multiestablishment companies, all single-establishment companies with estimated total employment of 20 employees or more, and a probability sample of single-establishment companies with estimated employment of fewer than 20 employees.

Supplementing the sample were construction companies identified from the NC-9923, General Schedule. Also affecting the sample were the misclassified companies; i.e., companies included in the samples of other trade areas which reported they were construction companies and companies originally classified in construction which reported they were not construction companies.

Of the 533,000 single-establishment employer companies initially classified as construction companies, 147,000 were included in the sample. All of the 13,000 establishments of multiestablishment companies were included in the sample. There was a net increase in the sample of 60,000 establishments resulting from establishments originally unclassified (receiving the NC-9923) or misclassified.

The probability sample of the smaller single-establishment companies was a stratified random sample. Strata were formed from all establishments with the same initial four-digit SIC code, in the same State, in the same metropolitan



area or in the balance of the State, and in the same size class based on estimated total employment. If the four-digit SIC code for an establishment was incomplete, the establishment was placed in a stratum for miscellaneous companies. Because they were small, all companies were included in the sample for the following three industries: SIC 1622, Bridge, Tunnel, and Elevated Highway Construction Contractors; SIC 1795, Wrecking and Demolition Work Special Trade Contractors; and SIC 1796, Installation or Erection of Building Equipment Special Trade Contractors.

#### Estimation procedures for 1987 and 1982 data—

Since all larger employer companies and some smaller ones were included in the census, sample estimation was required only for the universe of companies not selected with certainty. The published statistics are the totals of the estimates for the sampled companies and the aggregates for the certainty companies. All estimates for 1987 and 1982 published here are simple unbiased estimates of the form:

$$x'_c = \frac{\sum_{i=1}^{n_c} x_i}{n_c}$$

where:  $x'_c$  is the simple unbiased estimate of a characteristic for a publication cell.

$x_i$  is the reported value of a characteristic for an individual establishment in the publication cell.

$p_i$  is the selection probability of that firm.

$n_c$  is the number of firms in the sample for the cell.

Data for certain characteristics were reported as a percentage of the dollar value of business done. Before this formula was applied to those characteristics, it was necessary to convert the reported percentages into dollars.

**Reliability of employer statistics**—Since the estimates for employer establishments in these reports are based on the samples, they are subject to sampling variability and may be expected to differ from results which would have been obtained if a complete census had been taken using the same forms and procedures. The sampling errors shown in the tables were estimated directly from the sample reports, using methods appropriate for the sample design and form of estimation used.

The relative standard error is a measure of sampling variability, i.e., the variation that might occur by chance because only a sample of the population is surveyed. As calculated for this report, the relative standard error also partially reflects the effect of random errors of response and processing, but it does not take into account the effect of any consistent biases due to those types of errors. The chances are about 68 out of 100 that an estimate from the

sample would differ from a complete census by less than the relative standard error. The chances are about 95 out of 100 that the difference is less than twice the relative standard error and about 99 out of 100 that it is less than 2-1/2 times the relative standard error. Individual estimates with large relative standard errors have been shown in the published tables. Any such estimates should be used with caution. The very large relative standard errors generally occur for the smaller estimates.

Relative standard errors have been calculated for all of the published statistics, although they are shown for each statistic only in the tables presenting detailed statistics. Other tables show relative standard errors only for certain characteristics because of lack of space.

As calculated for this report, the relative standard error measures certain nonsampling errors, but does not measure any systematic biases in the data. Bias is the difference, averaged over all possible samples with the same size and design, between the estimates and the true value being estimated. Nonsampling errors can be attributed to many sources: inability to obtain information about all cases in the sample; definitional difficulties; differences in interpretation of questions; inability or unwillingness of respondents to provide correct information; and errors made in processing the data. Although no direct measurements of the biases have been obtained, it is believed that most of the important response and operational errors were detected in the course of reviewing the data for reasonableness and consistency.

A potential source of bias is in the imputation for those establishments that have not responded by the time of final publication. Data were estimated for establishments that did not report by that date, although selected establishments were contacted again to obtain as much information on the telephone as possible. Some publication cells in which more than 40 percent of the data were not reported have been suppressed.

### Nonemployer Companies

As described earlier, the information derived from the business income tax returns of all companies was matched to the census employer file on the basis of common identification numbers. Those business income tax returns which could not be matched, were further classified on the basis of several characteristics. Returns with characteristics consistent with companies without payroll were treated as nonemployers. The nonemployer construction companies were not required to file census reports.

For "number of establishments," each separate income tax return was assumed to be an establishment. "All business receipts" was based on receipts information reported on the tax return.

Since no sampling was involved in the nonemployer establishments, the statistics for nonemployers are not subject to sampling variability. However, these data are subject to an unknown amount of reporting and processing errors which could not be detected by the Census Bureau.



## CENSUS REPORT FORMS

Information for the 1987 Census of Construction Industries was obtained from employer establishments primarily through the use of twenty-four questionnaires, determined by industry classification and size. Standard forms and short forms were developed for each of the following SIC groups: 15, 16, 171, 172, 173, 174, 175, 176, 177, 178, and 179 and for the establishments classified in SIC 6552. Establishments with 50 or more employees all received the standard form. A sub-sample of establishments with fewer than 50 employees received short forms instead of the standard forms. The short forms covered only major items and omitted some of the detail found in the longer forms.

In reviewing and developing the questionnaires, comments and recommendations were elicited from construction trade associations and appropriate advisory groups. The Bureau surveyed several thousand firms representing all economic activities to gain insight into the way companies maintain records and to see whether new information could be collected.

## DATA PROCESSING

The 1987 census report forms were mailed out in December 1987. They were mailed from and returned to the Census Bureau's Data Preparation Division in Jeffersonville, Ind., where routine editing and coding of the report forms were also accomplished. Collection of these report forms was essentially completed in July 1988.

The returned reports underwent extensive processing. A preliminary edit done at the time of data entry identified obviously deficient reports and reports needing clarification. When necessary, these problems were resolved by further contact with the respondents. Next, the data were transmitted to Census Bureau headquarters near Washington, DC.

Data records, then, underwent a detailed computer review and analysis. The records containing significant problems were referred for further analytical review and, if necessary, contacts were made with the respondents. The computer performed most classification coding (such as industry coding, geographic coding, and size coding), and imputation for missing items or for reports not received in time for tabulation. The imputation was performed on an industry (or industry group)-State (or geographic group) basis using all available response and administrative data.

The data records were then tabulated on an industry basis. Industry totals were subjected to analytical review, and selected statistics were prepared for the preliminary reports. Corrections resulting from this review were made to the computer records and final tabulations were produced.

The review of a preliminary report for an industry often uncovered the need for corrections or revisions to the data for another industry for which a preliminary report had already been published. The final reports incorporate all

revisions and corrections made during the review of the preliminary reports and contain considerable more data than were published in those reports.

## GEOGRAPHIC CLASSIFICATION

Information for the 1987 Census of Construction Industries' final industry report series is classified on the basis of two types of geographic distributions: (1) physical location of the establishment, and (2) location of construction work. A separate code was assigned on each basis allowing us to present data by both physical locations of the establishment and location of construction work.

The geographic area reports series presents similar data by industry for each State (physical location of the establishment) and for selected MSA's, CMSA's and PMSA's.

## DUPLICATION IN VALUE OF CONSTRUCTION WORK

The aggregate of value of construction work reported by all construction establishments in each of the several industry, geographic area, or other groupings in this census, contains varying amounts of duplication, since the construction work of one firm may be subcontracted to other construction firms and also be included in the subcontractors' value of construction work. To avoid this duplication, a "net" value of construction work figure has been derived for each establishment by subtracting the costs for construction work subcontracted to others from the value of construction work.

Duplication in value of business between other construction and nonconstruction industries, results from the use of products of these other industries as input materials by construction establishments. "Value added," avoids this duplication and is, for most purposes, the best measure for comparing the relative economic importance of industries or areas. "Value added," is defined in the 1987 Census of Construction Industries as equal to dollar value of business done less costs for construction work subcontracted to others and payments for materials, components, supplies, and fuels. However, for SIC 6552 and SIC 1531 where land receipts are significant, land receipts are also subtracted from dollar value of business done.

## SPECIAL TABULATIONS

Special tabulations of data collected in the 1987 Census of Construction Industries may be obtained on computer tape or in tabular form. The data will be in summary form and subject to the same rules prohibiting disclosure of confidential information (including name, address, kind of business, or other data for individual business establishments or companies) as are the regular publications.

Special tabulations are prepared on a cost basis. A request for a cost estimate, as well as exact and detailed specifications of the type and format of the data to be provided, should be directed to the Chief, Construction Statistics Division, Bureau of the Census, Washington, DC, 20233.



To discuss a special tabulation before submitting specifications, call 301-763-7546.

**COMPARABILITY OF CENSUS OF CONSTRUCTION INDUSTRIES DATA WITH OTHER DATA**

Data contained in the reports of the 1987 Census of Construction Industries are not the same as the data published in the Census Bureau's monthly Construction Reports, Series C30, Value of New Construction Put in Place. The main difference is that the C30 series covers all new construction put in place without regard to who is performing the construction activity, whereas the construction census figures cover both new construction and maintenance and repair work done by establishments classified in the construction industry. Significant amounts of construction are done by establishments classified outside of construction (in real estate, manufacturing, utilities and communications, for example), both as "force account" construction and construction done for others. In addition, the value in place series includes construction-related expenses such as architectural and engineering costs and the costs of materials supplied by owners which are normally not reflected in the Census of Construction.

Data contained in the reports of the census of construction industries may also differ from industry data in "Employment and Earnings Statistics," published by the Bureau of Labor Statistics, and "Statistics of Income," published by the Internal Revenue Service. These differences arise from varying definitions of scope, coverage, timing, classification, and methodology.

**ABBREVIATIONS AND SYMBOLS**

The following abbreviations and symbols are used in this publication:

- \* Sampling error exceeds 40 percent.
- \*\* Represents the sum of all employees during pay periods including 12th of March, May, August, and November, divided by 4.
- Represents zero.
- † Represents value of construction work less costs for construction work subcontracted to others. (See Duplication in Value of Construction Work.)
- †† Represents dollar value of business done less costs for construction work subcontracted to others, and costs for materials, components, supplies, and fuels. In SIC's 1531 and 6552, land receipts are also subtracted from dollar value of business done. (See Duplication in Value of Construction Work.)
- (D) Withheld to avoid disclosing data for individual companies; data are included in higher level totals.
- (NA) Not available.
- (S) Withheld because estimate did not meet publication standards on the basis of either the response rate, associated relative standard error, or a consistency review.
- (W) Greater than zero but less than 1 percent.
- (X) Not applicable.
- n.s.k. Not specified by kind.

# Users' Guide for Locating Statistics in This Report by Table Number

Statistics	For U.S.	By State	By employment size	By size class of dollar value of business done	By type, class, ownership, kind of business, and location of construction <sup>1</sup>	By specialization in types of construction
Assets and depreciation (gross book value):						
Beginning of year—buildings, machinery and equipment .....	3					
End of year—total .....	1, 3	1	5	6		
End of year—buildings, machinery and equipment .....	3					
Depreciation charges during year—buildings, machinery and equipment .....	3					
Capital expenditures:						
Total capital expenditures .....	1, 3	1	5	6		
New buildings—machinery and equipment .....	3					
Used buildings—machinery and equipment .....	3					
Communication services, costs for .....	2					
Employees:						
All employees—average number .....	1, 2	1	5	6		8
Construction workers—average number .....	1, 2, 9	1, 9				
Other employees—average number .....	2					
Employer costs for fringe benefits—legally required and voluntary expenditures .....	2					
Establishments—number in business during year .....	1, 2, 4, 9	1, 9	5	6		8
Hours—construction workers:						
Total .....	1, 2, 9	1, 9	5	6		
Quarterly .....	2, 9	9				
Inventories .....	4					
Materials, components, supplies, and fuels—costs for .....	1, 2	1	5	6		
Payroll:						
First quarter, all employees .....	2					
Annual:						
All employees .....	1, 2	1	5	6		8
Construction workers .....	1, 2	1				
Other employees .....	2					
Power, fuels, and lubricants—costs for .....	2					
Proprietors and working partners .....	2					
Ratios, State .....	13	13				
Value and receipts:						
Dollar value of business done, total .....	2		5	6	11	
Value of construction work, total .....	1, 2, 4	1	5	6	2, 7, 10	8
For work subcontracted in from others .....	2					
Other business receipts and land receipts <sup>2</sup> .....	2					
Net value of construction work .....	1, 2	1	5	6		8
Value added .....	1, 2	1	5	6		8
Rental costs:						
Total .....	1, 2	1	5	6		
For machinery and equipment .....	2					
For buildings .....	2					
Repairs to buildings and other structures .....	2					
Repairs to machinery and equipment .....	2					
Selected industry ratios .....	12					
Subcontract work to others, costs for .....	1, 2	1	5	6		8

Note: Data for 1982 and earlier years are also available in some of these tables.

<sup>1</sup>Type—buildings, roads, etc. Class—new construction; additions, alterations, or reconstruction; or maintenance and repair work. Ownership—private or government owned.

<sup>2</sup>Land receipts are shown separately for SIC's 1531 and 6552 only.



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# SUMMARY OF FINDINGS

Establishments classified in this industry are primarily engaged in plumbing, heating, or air-conditioning work or any combination of these types of work. Sheet metal work performed by plumbing, heating, and air-conditioning contractors in conjunction with the installation of plumbing, heating, and air-conditioning equipment is included here, but roofing and sheet metal work contractors are classified in Industry 1761, Roofing, Siding, and Sheet Metal Work Special Trade Contractors. For additional examples, refer to the 1987 Standard Industrial Classification (SIC) Manual published by the Office of Management and Budget, Executive Office of the President.

During 1987, the establishments with paid employees classified in this industry accounted for \$50.2 billion in total dollar value of business. Of this amount, \$49.5 billion were for the value of construction work. These establishments paid out \$18.6 billion for materials, components, and supplies and \$5.0 billion for construction work subcontracted to others. Costs for selected power, fuels, and lubricants for this industry were \$766 million. Value added for 1987 was \$25.9 billion.

There were 69,566 establishments with total employment averaging 617,333 during the year. Total payroll for 1987 was \$14.3 billion. Total hours worked by construction workers during the year were 845 million hours.

Larger establishments with 20 employees or more, while representing only 9 percent of the total number of employer establishments in this industry accounted for 58 percent of all business done.

A "construction establishment" is defined as a relatively permanent office, or other place of business, where the usual business activities related to construction are conducted. A separate census report was required from each sampled establishment covering domestic operations. Separate reports were not, however, required for each project or construction site.

In 1987, the value of construction work was collected to better measure actual construction activity done during the year. Construction receipts, as reported in earlier censuses, may have included the value of work done before or after the calendar year and may have excluded the value of work in progress during the calendar year. Receipts may have also excluded work done by builders engaged in construction for sale on their own account or for their own use. All dollar values are shown in current dollars for the years specified and have not been adjusted for inflation.

The data in this report are estimated from a sample survey and are subject to sampling variability as well as errors of response and nonreporting. The relative standard error shown in the tables is a measure of sampling variability. Descriptions of the sampling, estimating procedures, and data reliability are included in the Introduction.



Figure 1. **Value of Construction Work by Type of Construction**  
(Percent)

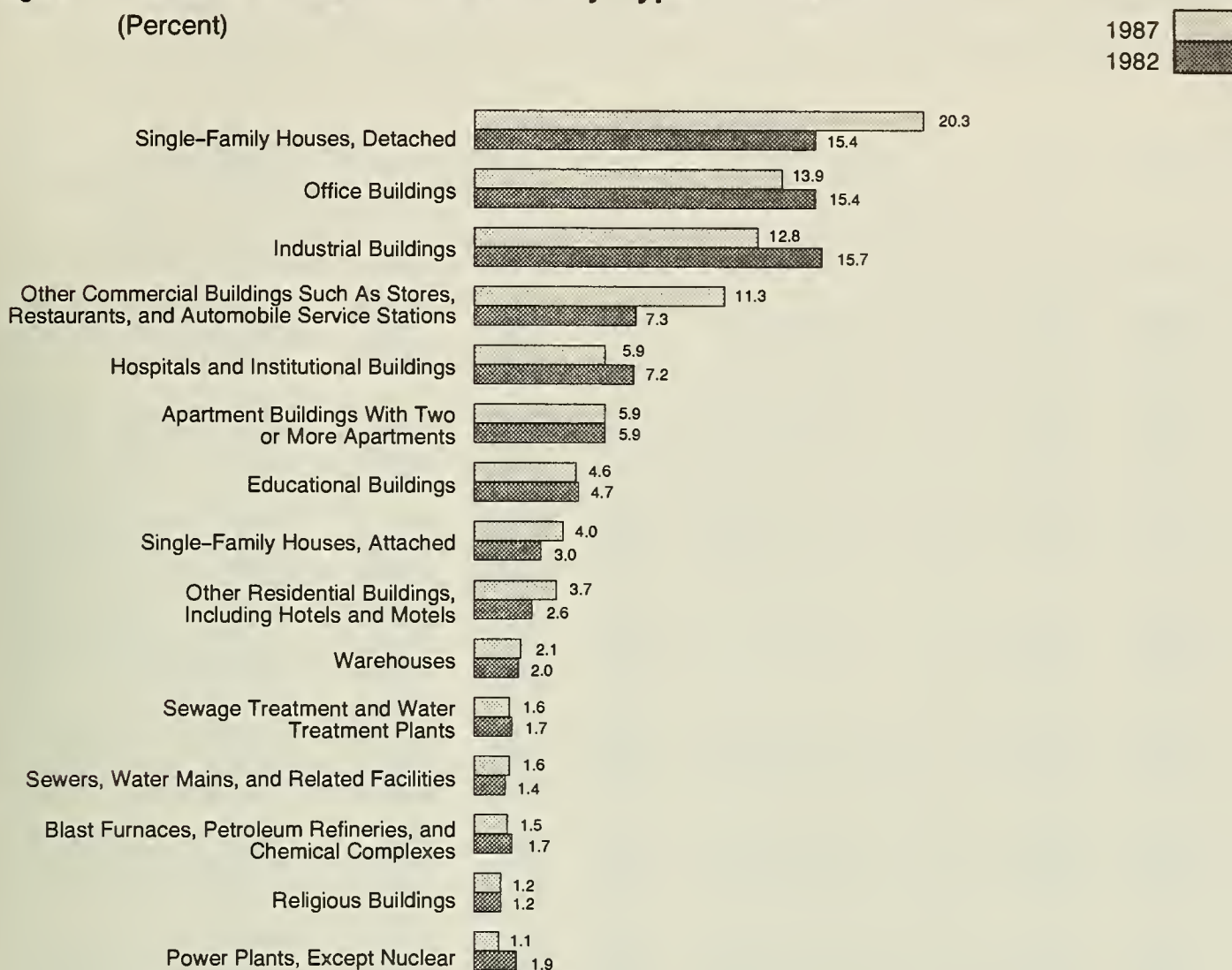
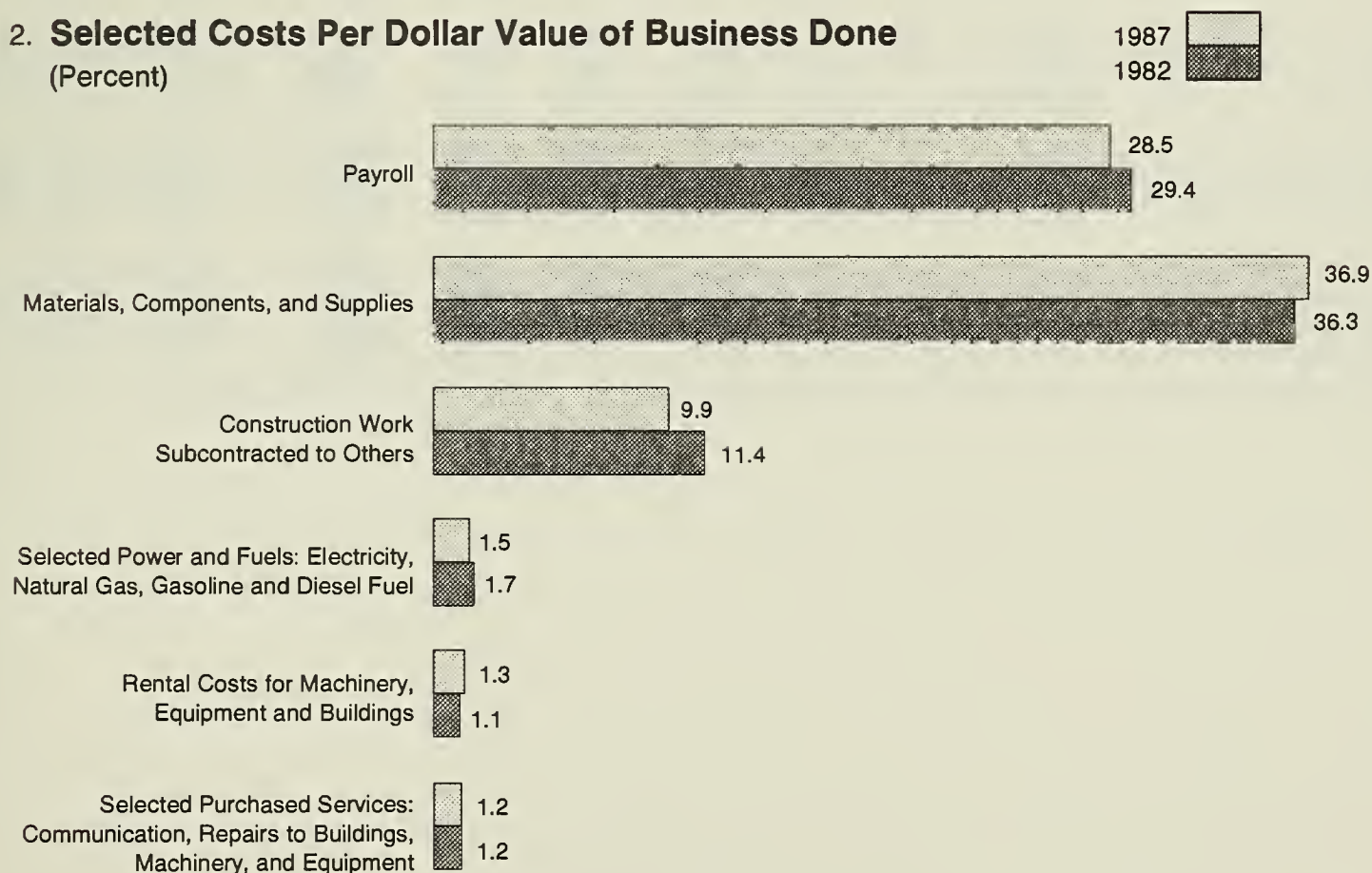


Figure 2. **Selected Costs Per Dollar Value of Business Done**  
(Percent)



**Table 1. General Statistics for Establishments With Payroll by State: 1987 and 1982**

[Thousand dollars. Detail may not add to total due to rounding. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Location of establishment	1987							
	Number of establishments	Employees**		Payroll		Construction worker hours (thousands)	Value of construction work	Net value of construction work†
		All	Construction workers	All employees	Construction workers			
A	B	C	D	E	F	G	H	
United States .....	69 566	617 333	470 793	14 329 834	10 310 628	844 750	49 503 323	44 517 739
Alabama .....	1 067	9 187	7 282	171 249	126 535	12 977	596 364	556 462
Alaska .....	173	871	632	26 623	19 094	1 199	104 971	86 851
Arizona .....	1 086	10 545	8 178	217 068	157 577	14 154	757 758	700 875
Arkansas .....	634	3 763	2 931	67 099	48 965	5 414	261 538	238 783
California .....	6 332	64 720	49 300	1 777 997	1 291 980	84 616	5 975 639	5 482 215
Colorado .....	1 230	10 225	7 788	178 941	127 287	11 537	634 449	548 275
Connecticut .....	1 285	11 107	8 394	299 106	203 449	15 727	949 573	855 526
Delaware .....	257	2 658	2 115	57 730	42 139	4 004	197 689	175 144
District of Columbia .....	48	1 172	901	31 872	22 384	1 526	94 492	80 807
Florida .....	4 337	42 344	32 295	792 856	566 532	58 741	2 793 088	2 590 474
Georgia .....	1 942	19 379	14 971	377 368	266 024	26 629	1 437 158	1 299 545
Hawaii .....	194	2 083	1 519	62 276	46 725	2 923	204 342	184 522
Idaho .....	293	1 657	1 239	31 738	23 215	2 016	116 977	108 004
Illinois .....	3 116	28 475	21 487	813 625	602 623	38 659	2 596 230	2 333 609
Indiana .....	1 513	14 755	11 108	357 899	259 396	20 202	1 201 123	1 074 349
Iowa .....	799	5 079	3 773	106 412	78 736	6 478	369 059	330 756
Kansas .....	847	5 811	4 361	122 829	89 576	7 711	402 292	373 646
Kentucky .....	945	8 161	6 423	147 457	109 537	11 811	543 223	493 752
Louisiana .....	919	6 487	4 825	119 061	83 100	8 597	462 665	402 748
Maine .....	421	2 875	2 192	57 982	42 406	4 008	206 533	187 000
Maryland .....	1 580	21 202	16 512	483 100	347 162	31 151	1 746 564	1 496 277
Massachusetts .....	2 173	17 765	13 593	454 250	326 712	25 004	1 563 375	1 392 662
Michigan .....	2 275	19 591	14 687	494 212	351 503	26 689	1 772 975	1 576 817
Minnesota .....	1 192	11 260	8 496	318 795	225 948	15 567	1 047 690	922 630
Mississippi .....	541	3 757	3 007	65 677	49 358	5 716	259 435	233 427
Missouri .....	1 420	13 070	9 722	350 713	257 666	17 604	1 208 907	1 007 346
Montana .....	241	1 041	730	20 040	14 311	1 216	73 898	64 306
Nebraska .....	523	3 611	2 658	68 555	49 134	4 820	254 436	233 177
Nevada .....	298	3 068	2 398	76 957	56 546	3 788	266 110	251 902
New Hampshire .....	522	3 796	2 950	87 759	63 235	5 352	309 159	278 792
New Jersey .....	3 040	23 788	18 364	630 816	450 217	33 978	2 167 859	1 951 662
New Mexico .....	511	3 276	2 490	54 984	40 725	4 612	205 093	181 582
New York .....	4 640	42 058	31 541	1 127 336	789 688	58 239	3 951 782	3 459 380
North Carolina .....	2 332	21 528	16 717	393 921	285 023	30 795	1 380 772	1 283 099
North Dakota .....	233	1 234	913	22 959	16 530	1 405	91 319	79 145
Ohio .....	2 695	27 187	20 692	656 291	472 245	37 593	2 017 620	1 802 511
Oklahoma .....	890	4 858	3 691	91 440	67 185	6 479	357 830	322 685
Oregon .....	632	4 632	3 374	108 437	77 986	5 450	377 566	338 380
Pennsylvania .....	3 180	27 660	21 507	691 227	512 145	38 918	2 341 572	2 092 889
Rhode Island .....	309	1 885	1 398	43 646	32 414	2 251	172 903	147 876
South Carolina .....	1 060	10 514	8 279	183 169	133 011	14 932	669 171	616 123
South Dakota .....	215	1 191	841	19 222	13 616	1 441	76 583	72 003
Tennessee .....	1 200	12 417	9 677	237 815	171 471	17 446	892 336	810 493
Texas .....	4 519	36 415	27 533	763 968	534 786	49 414	2 687 530	2 429 027
Utah .....	462	3 774	2 875	73 274	54 462	4 853	301 199	255 971
Vermont .....	316	1 710	1 340	31 936	23 487	2 328	129 280	116 961
Virginia .....	1 954	21 062	16 277	418 873	287 245	29 168	1 385 283	1 279 369
Washington .....	1 097	8 404	6 219	211 658	154 341	10 429	756 797	671 183
West Virginia .....	352	2 233	1 757	42 929	33 263	3 242	138 243	128 453
Wisconsin .....	1 551	11 208	8 249	275 272	202 158	15 049	943 910	874 272
Wyoming .....	151	761	567	13 394	9 752	867	50 939	43 974

†In earlier censuses, construction receipts only were collected. In 1987, the value of construction work was collected to better measure actual construction activity done during the year.



1987—Con.						1982			Relative standard error of estimate (percent) for column—			Location of establishment
Value added††	Cost of materials, components, supplies, and fuels	Cost of construction work sub-contracted to others	Rental cost for machinery, equipment, and buildings	Capital expenditures, other than land	End-of-year gross book value of depreciable assets	All employees**	Total construction receipts¹	Value added††				
I	J	K	L	M	N	O	P	Q	B	H	M	
25 911 790	19 322 278	4 985 584	664 587	720 556	4 999 938	512 004	32 661 277	16 961 501	(W)	(W)	1	U.S.
299 431	261 331	39 902	7 985	11 143	68 900	6 020	325 998	150 337	2	2	11	AL
54 019	34 801	18 120	2 100	301	8 798	1 876	150 235	74 557	8	9	18	AK
386 705	326 752	56 883	12 680	9 104	89 082	7 738	451 715	230 035	2	2	10	AZ
115 804	126 501	22 754	3 356	3 421	33 206	3 486	185 763	88 143	5	4	13	AR
3 365 458	2 199 958	493 424	97 903	71 600	514 792	50 766	3 591 253	2 057 293	1	1	4	CA
302 483	256 096	86 173	11 688	6 860	67 612	9 633	648 347	364 504	2	2	9	CO
501 254	362 383	94 046	13 709	14 533	85 310	7 151	470 383	263 047	2	2	7	CT
104 334	75 012	22 545	2 813	5 660	26 320	3 351	153 302	108 739	4	3	23	DE
51 141	29 666	13 685	1 241	1 064	8 482	1 043	62 795	33 675	3	3	6	DC
1 412 969	1 214 157	202 614	39 103	42 018	292 529	33 580	1 867 327	918 290	1	1	5	FL
680 239	631 329	137 612	18 792	22 846	157 673	12 195	728 023	319 918	2	2	5	GA
126 024	61 214	19 820	3 839	1 478	16 512	2 111	135 656	84 487	3	2	20	HI
60 991	50 172	8 973	1 445	1 609	18 228	1 680	110 891	58 611	5	5	22	ID
1 407 347	960 607	262 620	31 540	33 194	220 938	23 125	1 541 560	870 934	1	1	6	IL
632 928	461 891	126 773	12 686	21 486	122 355	11 663	727 302	381 742	2	1	6	IN
185 324	160 614	38 302	4 823	5 940	53 188	4 866	275 525	141 380	3	3	13	IA
230 056	153 650	28 645	5 743	7 768	58 648	5 771	324 715	165 659	3	3	13	KS
277 988	221 755	49 470	5 952	10 809	58 900	6 748	399 518	199 829	3	2	14	KY
219 696	186 270	59 916	7 387	7 186	62 612	8 945	560 840	273 642	4	2	16	LA
109 869	85 386	19 533	2 630	3 987	19 704	1 719	98 176	49 556	5	4	15	ME
882 217	627 970	250 287	20 041	32 056	159 807	13 818	906 312	430 865	1	1	8	MD
832 123	581 768	170 713	18 946	20 176	129 912	11 567	770 737	413 530	2	2	6	MA
945 744	653 975	196 158	22 411	27 061	166 726	13 228	928 916	468 144	2	1	7	MI
543 693	396 000	125 060	11 921	13 856	119 720	10 015	702 332	347 567	2	2	8	MN
129 664	106 737	26 007	2 090	7 472	33 706	3 451	177 164	89 534	4	4	17	MS
569 311	450 969	201 561	15 111	14 553	105 674	10 404	699 100	378 759	2	2	9	MO
38 946	28 239	9 592	1 235	1 069	13 269	1 046	75 221	34 035	7	6	33	MT
129 684	108 608	21 259	3 192	4 678	35 118	3 264	191 334	96 188	6	4	17	NE
143 796	110 972	14 208	3 800	3 385	20 374	2 367	182 946	105 279	4	4	16	NV
158 470	127 631	30 366	4 628	5 741	30 318	1 582	102 623	46 856	4	4	15	NH
1 155 305	818 829	216 197	26 739	32 558	187 262	18 076	1 214 186	662 471	1	1	5	NJ
111 772	76 888	23 510	3 706	3 896	35 713	3 079	168 361	79 865	4	4	17	NM
2 137 461	1 359 819	492 402	48 527	49 969	345 732	32 610	2 260 551	1 182 317	1	1	4	NY
705 150	600 373	97 672	17 010	26 896	185 497	16 306	802 393	403 470	2	2	7	NC
41 861	40 341	12 174	1 002	861	11 770	1 610	115 086	55 671	6	6	28	ND
1 044 399	780 562	215 108	24 197	26 405	164 491	21 071	1 334 521	738 110	1	1	6	OH
184 434	143 184	35 144	5 427	6 443	48 056	6 837	440 469	217 786	3	3	16	OK
199 510	144 130	39 186	5 747	5 631	36 070	3 794	255 820	135 783	3	3	17	OR
1 266 872	867 162	248 683	29 019	34 085	208 149	27 493	1 848 767	970 461	1	1	5	PA
83 344	68 440	25 027	2 321	3 069	12 434	1 585	106 262	43 654	5	5	15	RI
320 578	304 426	53 048	7 256	8 624	72 802	8 370	404 968	196 737	2	2	11	SC
39 538	36 046	4 580	952	1 276	13 512	1 002	55 265	24 813	8	7	36	SD
423 643	395 502	81 842	10 598	15 282	96 124	8 376	486 141	231 245	2	2	8	TN
1 341 943	1 130 480	258 502	43 852	31 651	359 628	46 817	3 084 571	1 486 630	1	1	5	TX
140 228	122 353	45 227	3 883	5 204	40 341	3 348	254 668	117 271	7	3	13	UT
67 175	56 130	12 319	1 445	2 298	10 662	827	44 617	20 981	6	6	34	VT
715 838	583 685	105 913	15 517	27 030	169 620	14 097	749 339	378 436	2	1	6	VA
417 152	279 184	85 614	11 326	9 106	71 505	7 245	586 535	303 615	2	3	11	WA
75 795	55 748	9 789	1 626	2 292	19 810	2 235	102 688	56 930	7	5	17	WV
514 494	387 400	69 638	13 139	14 729	103 755	11 798	733 477	377 945	2	2	6	WI
27 566	19 160	6 965	485	1 173	8 570	1 201	66 564	32 153	10	12	31	WY

**Table 2. Detailed Statistics for Establishments With Payroll: 1987 and Earlier Census Years**

[Thousand dollars. Detail may not add to total due to rounding. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Item	1987	1982	1977	1972	Relative standard error of estimate (percent)			
					1987	1982	1977	1972
Number of establishments in business during year .....	69 566	60 243	56 435	53 301	(W)	1	1	1
Proprietors and working partners .....	17 982	19 761	28 698	30 746	2	2	2	2
All employees** .....	617 333	512 004	458 687	456 100	(W)	(W)	(W)	1
Construction workers:								
March .....	452 744	381 815	341 167	342 751	(W)	(W)	(W)	1
May .....	469 279	390 306	367 815	361 099	(W)	(W)	(W)	1
August .....	491 584	407 130	386 712	385 330	(W)	(W)	(W)	1
November .....	469 567	388 931	378 311	376 386	(W)	(W)	(W)	1
Average .....	470 793	397 548	368 993	371 113	(W)	(W)	(W)	1
Other employees:								
March .....	144 063	114 266	86 771	82 782	(W)	1	1	1
May .....	143 590	(NA)	(NA)	(NA)	(W)	(NA)	(NA)	(NA)
August .....	147 448	(NA)	(NA)	(NA)	(W)	(NA)	(NA)	(NA)
November .....	151 080	(NA)	(NA)	(NA)	(W)	(NA)	(NA)	(NA)
Average .....	146 545	(NA)	(NA)	(NA)	(W)	(NA)	(NA)	(NA)
Construction worker hours (thousands):								
January to March .....	197 416	158 097	(NA)	(NA)	(W)	(W)	(NA)	(NA)
April to June .....	210 144	163 328	(NA)	(NA)	(W)	(W)	(NA)	(NA)
July to September .....	223 258	170 170	(NA)	(NA)	(W)	1	(NA)	(NA)
October to December .....	213 931	164 250	(NA)	(NA)	(W)	1	(NA)	(NA)
Total hours worked .....	844 750	655 847	(NA)	(NA)	(W)	(W)	(NA)	(NA)
Payroll, all employees .....	14 329 834	9 860 690	6 413 961	4 787 958	(W)	(W)	(W)	1
Payroll, construction workers .....	10 310 628	7 476 808	5 024 679	3 809 878	(W)	(W)	(W)	1
Payroll, other employees .....	4 019 206	2 383 881	1 389 282	978 080	(W)	(W)	(W)	1
First quarter payroll, all employees .....	3 297 114	2 322 105	1 401 612	(NA)	(W)	(W)	(W)	(NA)
Employer costs for fringe benefits, all employees .....	3 124 864	1 792 827	1 191 833	(NA)	(W)	(W)	(W)	(NA)
Legally required expenditures .....	1 986 535	1 344 811	613 373	(NA)	(W)	(W)	(W)	(NA)
Voluntary expenditures .....	1 138 328	448 015	578 461	(NA)	(W)	(W)	(W)	(NA)
Dollar value of business done .....	50 219 653	33 521 439	21 431 185	15 615 468	(W)	(W)	(W)	1
Value of construction work <sup>1</sup> .....	49 503 323	32 661 277	21 072 098	15 321 135	(W)	(W)	(W)	1
Value of construction work subcontracted in from others .....	21 987 082	14 977 848	10 895 292	6 618 199	1	(W)	(W)	1
Land receipts <sup>2</sup> .....	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
Other business receipts .....	716 330	860 162	359 087	294 333	2	1	2	2
Net value of construction work† .....	44 517 739	28 846 061	19 135 815	13 594 125	(W)	(W)	(W)	1
Value added†† .....	25 911 790	16 961 501	10 681 068	7 794 530	(W)	(W)	(W)	1
Selected costs .....	24 307 862	16 559 938	10 750 117	7 820 938	(W)	(W)	(W)	1
Materials, components, and supplies <sup>3</sup> .....	18 556 072	12 165 599	8 495 261	6 093 928	(W)	(W)	(W)	1
Construction work subcontracted to others .....	4 985 584	3 815 215	1 936 282	1 727 010	1	(W)	(W)	1
Selected power, fuels, and lubricants .....	766 206	579 123	318 575	(NA)	1	1	1	(NA)
Electricity .....	119 454	83 116	41 281	(NA)	1	1	1	(NA)
Natural gas .....	32 481	29 861	26 118	(NA)	1	1	1	(NA)
Gasoline and diesel fuel .....	567 556	434 274	227 035	(NA)	1	1	1	(NA)
On highway use .....	519 004	(NA)	(NA)	(NA)	(W)	(NA)	(NA)	(NA)
Off highway use .....	48 551	(NA)	(NA)	(NA)	2	(NA)	(NA)	(NA)
Other, including lubricating oils and greases .....	46 713	31 872	24 142	(NA)	2	2	1	(NA)
Rental cost for machinery, equipment, and buildings .....	664 587	364 921	184 692	(NA)	1	1	1	(NA)
For machinery and equipment .....	287 552	191 898	107 612	59 520	1	1	1	3
For buildings .....	377 035	173 022	77 080	(NA)	1	1	1	(NA)
Selected purchased services .....	596 403	392 979	259 566	(NA)	1	1	2	(NA)
Communication services .....	298 091	186 256	117 679	(NA)	1	1	3	(NA)
Repairs to buildings and other structures .....	53 347	37 877	18 505	(NA)	2	1	2	(NA)
Repairs to machinery and equipment .....	244 964	168 844	123 383	(NA)	1	1	3	(NA)
Ownership of construction projects:								
Value of construction work <sup>1</sup> .....	49 503 323	32 661 277	21 072 098	15 321 135	(W)	(W)	(W)	1
Government owned .....	7 129 289	4 684 376	3 194 485	3 545 137	1	2	(W)	1
Federal .....	2 353 812	(NA)	(NA)	(NA)	2	(NA)	(NA)	(NA)
State and local .....	4 775 476	(NA)	(NA)	(NA)	1	(NA)	(NA)	(NA)
Privately owned .....	42 374 033	27 976 900	17 877 613	11 775 998	(W)	(W)	(W)	1

<sup>1</sup>In earlier censuses, construction receipts only were collected. In 1987, the value of construction work was collected to better measure actual construction activity done during the year.

<sup>2</sup>Data were collected separately for establishments classified in SIC 1531, Operative Builders, and SIC 6552, Subdividers and Developers, Except Cemeteries. For all other industries, data are included in other business receipts.

<sup>3</sup>For 1972, includes data for power, fuels, and lubricants.



Table 3. **Assets, Capital Expenditures, and Depreciation for Establishments With Payroll: 1987 and 1982**

[Thousand dollars. Detail may not add to total due to rounding. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Item			Relative standard error of estimate (percent)	
			1987	1982
<b>BUILDINGS AND OTHER STRUCTURES, MACHINERY, AND EQUIPMENT</b>				
Beginning-of-year gross book value of depreciable assets .....	4 476 131	4 273 764	1	1
Capital expenditures, other than land .....	720 556	438 977	1	1
New .....	565 812	339 166	1	1
Used .....	154 744	99 810	3	2
Retirements and disposition of depreciable assets.....	196 749	134 930	3	2
End-of-year gross book value of depreciable assets .....	4 999 938	4 577 811	1	1
Depreciation charges during year .....	662 294	708 686	1	1
<b>Buildings and other Structures, Additions, and Related Facilities</b>				
Beginning-of-year gross book value of depreciable assets .....	1 329 493	1 084 222	2	1
Capital expenditures, other than land .....	119 228	75 540	3	2
New buildings and other structures .....	73 396	58 297	4	2
Used buildings and other structures .....	45 831	17 243	6	6
Retirements and disposition of depreciable assets.....	42 343	25 844	4	3
End-of-year gross book value of depreciable assets .....	1 406 377	1 133 918	2	1
Depreciation charges during year .....	124 058	118 108	3	2
<b>Machinery and Equipment</b>				
Beginning-of-year gross book value of depreciable assets .....	3 146 637	3 189 541	1	1
Capital expenditures, other than land .....	601 328	363 436	1	1
New machinery and equipment, including automobiles and trucks .....	492 415	280 869	1	1
New automobiles and trucks, intended primarily for highway use .....	338 010	163 871	2	1
Used machinery and equipment, including automobiles and trucks .....	108 913	82 567	3	2
Retirements and disposition of depreciable assets.....	154 405	109 085	3	2
End-of-year gross book value of depreciable assets .....	3 593 560	3 443 892	1	1
Depreciation charges during year .....	538 235	590 578	1	1

Table 4. Value of Inventories for Establishments With Payroll: 1987 and 1986

[Thousand dollars. Detail may not add to total due to rounding. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Item	Establishments with payroll	Relative standard error of estimate (percent)
All establishments:		
Number .....	69 566	(W)
Value of construction work .....	49 503 323	(W)
Establishments with inventories:		
Number .....	39 403	1
Value of construction work .....	32 726 948	1
Inventories <sup>1</sup> :		
End of 1987, materials and supplies .....	1 202 472	1
End of 1986, materials and supplies .....	1 119 213	1
Establishments with no inventories:		
Number .....	19 644	2
Value of construction work .....	9 175 841	1
Establishments not reporting:		
Number .....	10 519	3
Value of construction work .....	7 600 534	1

<sup>1</sup>Inventories at cost or market prior to any adjustment to correct to LIFO values.

Table 5. Selected Statistics for Establishments With Payroll by Employment Size Class: 1987 and 1982

[Thousand dollars. Detail may not add to total due to rounding. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Selected statistics	Total	Establishments with an average of—									1,000 employees or more
		1 to 4 employees	5 to 9 employees	10 to 19 employees	20 to 49 employees	50 to 99 employees	100 to 249 employees	250 to 499 employees	500 to 999 employees		
<b>1987</b>											
Number of establishments -----	69 566	38 347	15 828	8 975	4 732	1 144	457	62	15	2	
All employees** -----	617 333	77 420	102 309	119 018	138 718	76 706	65 658	21 794	15 707	(D)	
Payroll, all employees -----	14 329 834	1 191 761	1 892 371	2 582 876	3 504 299	2 109 492	1 914 324	716 844	417 865	(D)	
Construction worker hours (thousands) -----	844 750	100 086	126 734	159 102	194 440	111 035	97 675	32 917	22 758	(D)	
Dollar value of business done -----	50 219 653	5 698 758	6 701 658	8 893 040	12 026 128	7 057 268	6 485 932	2 286 602	1 070 266	(D)	
Value of construction work <sup>1</sup> -----	49 503 323	5 636 922	6 579 374	8 732 171	11 821 399	6 951 812	6 445 335	2 268 183	1 068 125	(D)	
Net value of construction work† -----	44 517 739	5 397 225	6 217 903	8 050 379	10 529 240	6 055 988	5 491 914	1 844 672	930 416	(D)	
Value added†† -----	25 911 790	2 927 527	3 570 519	4 770 035	6 170 715	3 562 334	3 299 591	1 054 757	556 310	(D)	
Cost of materials, components, supplies, and fuels -----	19 322 278	2 531 533	2 769 667	3 441 211	4 563 255	2 599 109	2 232 920	808 334	376 247	(D)	
Cost of construction work subcontracted to others -----	4 985 584	239 697	361 470	681 792	1 292 158	895 824	953 421	423 511	137 709	(D)	
Rental cost for machinery, equipment, and buildings -----	664 587	71 484	106 051	120 837	154 466	91 950	79 600	27 459	12 737	(D)	
Capital expenditures, other than land -----	720 556	121 821	136 328	150 042	164 482	77 095	47 967	18 099	4 722	(D)	
End-of-year gross book value of depreciable assets -----	4 999 938	866 600	871 436	1 005 613	1 118 550	557 205	384 057	132 046	64 429	(D)	
<b>1982</b>											
All employees** -----	512 004	73 702	85 191	93 609	106 875	51 817	52 987	21 413	11 926	14 482	
Total construction receipts <sup>1</sup> -----	32 661 277	3 782 197	4 407 025	5 505 201	7 281 937	4 228 357	4 311 329	1 646 948	698 675	799 606	
Value added†† -----	16 961 501	1 902 801	2 349 997	2 917 435	3 654 402	2 130 008	2 166 772	924 110	456 080	459 893	
<b>1987 RELATIVE STANDARD ERROR OF ESTIMATE (PERCENT)</b>											
All employees** -----	(W)	1	2	1	1	(W)	(W)	(W)	(W)	(D)	
Net value of construction work† -----	(W)	1	2	1	(W)	(W)	(W)	(W)	(W)	(D)	
Capital expenditures, other than land -----	1	4	4	3	2	1	(W)	(W)	(W)	(D)	

Note: Underscored data fields include data from adjoining columns which have been withheld to avoid disclosing data for individual companies.

<sup>1</sup>In earlier censuses, construction receipts only were collected. In 1987, the value of construction work was collected to better measure actual construction activity done during the year.



**Table 6. Selected Statistics by Size Class of the Dollar Value of Business Done for Establishments With Payroll: 1987 and 1982**

[Thousand dollars. Detail may not add to total due to rounding. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Selected statistics	Total	Establishments with dollar value of business done									
		Less than \$25,000	\$25,000 to \$49,999	\$50,000 to \$99,999	\$100,000 to \$249,999	\$250,000 to \$499,999	\$500,000 to \$999,999	\$1,000,000 to \$2,499,999	\$2,500,000 to \$4,999,999	\$5,000,000 to \$9,999,999	\$10,000,000 or more
<b>1987</b>											
Number of establishments -----	69 566	(S)	(S)	(S)	21 156	13 794	8 951	6 354	2 212	1 034	496
All employees** -----	617 333	(S)	(S)	(S)	60 983	79 732	89 727	120 984	82 355	71 696	90 022
Payroll, all employees -----	14 329 834	(S)	(S)	(S)	853 600	1 374 140	1 828 460	2 871 840	2 210 525	2 054 891	2 916 972
Construction worker hours (thousands) -----	844 750	(S)	(S)	(S)	78 311	101 239	117 345	167 791	117 903	101 954	135 056
Dollar value of business done -----	50 219 653	(S)	(S)	(S)	3 438 186	4 875 212	6 231 801	9 732 032	7 691 558	7 032 230	10 324 460
Value of construction work <sup>1</sup> -----	49 503 323	(S)	(S)	(S)	3 401 263	4 778 598	6 125 095	9 538 085	7 580 324	6 946 222	10 251 429
Net value of construction work† -----	44 517 739	(S)	(S)	(S)	3 303 830	4 588 855	5 833 848	8 827 943	6 724 464	5 979 430	8 400 151
Value added†† -----	25 911 790	(S)	(S)	(S)	1 816 406	2 607 880	3 395 222	5 221 579	3 889 785	3 531 234	4 981 934
Cost of materials, components, supplies, and fuels -----	19 322 278	(S)	(S)	(S)	1 524 347	2 077 588	2 545 332	3 800 310	2 945 912	2 534 203	3 491 248
Cost of construction work subcontracted to others -----	4 985 584	(S)	(S)	(S)	97 432	189 743	291 246	710 142	855 860	966 792	1 851 278
Rental cost for machinery, equipment, and buildings -----	664 587	(S)	(S)	(S)	48 767	77 315	87 680	134 230	99 699	84 786	122 706
Capital expenditures, other than land -----	720 556	(S)	(S)	(S)	83 265	109 874	112 089	161 540	94 167	72 632	66 062
End-of-year gross book value of depreciable assets -----	4 999 938	(S)	(S)	(S)	603 195	688 865	780 253	1 055 698	651 203	498 941	563 461
<b>1982</b>											
All employees** -----	512 004	7 175	7 518	19 527	65 302	69 491	72 181	89 359	54 007	43 709	83 733
Total construction receipts <sup>1</sup> -----	32 661 277	68 949	181 295	702 166	2 819 951	3 412 407	4 067 984	5 986 229	4 264 445	3 785 576	7 372 273
Value added†† -----	16 961 501	35 129	91 995	359 268	1 468 968	1 838 709	2 161 957	3 109 093	2 143 297	1 832 332	3 920 749
<b>1987 RELATIVE STANDARD ERROR OF ESTIMATE (PERCENT)</b>											
All employees** -----	(W)	(S)	(S)	(S)	2	2	1	1	(W)	(W)	(W)
Net value of construction work† -----	(W)	(S)	(S)	(S)	1	2	2	1	1	(W)	(W)
Capital expenditures, other than land -----	1	(S)	(S)	(S)	4	5	4	3	2	2	1

Note: Underscored data fields include data from adjoining columns which have been withheld to avoid disclosing data for individual companies.

<sup>1</sup>In earlier censuses construction receipts only were collected. In 1987, the value of construction work was collected to better measure actual construction activity done during the year.

**Table 7. Value of Construction Work for Establishments With Payroll by Type of Construction: 1987 and 1982**

[Thousand dollars. Detail may not add to total due to rounding. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Type of construction	Value of construction work <sup>1</sup>				Relative standard error of estimate (percent) for column—			
	Total	New construction	Additions, alterations, or reconstruction <sup>2</sup>	Maintenance and repair	A	B	C	D
	A	B	C	D	A	B	C	D
<b>1987</b>								
Value of construction work <sup>1</sup> .....	49 503 323	26 767 072	10 625 460	9 768 215	(W)	(W)	1	1
<b>Building construction</b> .....	43 233 667	24 659 468	9 686 895	8 887 309	(W)	(W)	1	1
Single-family houses .....	12 058 369	6 689 180	2 156 749	3 212 441	1	1	1	1
Single-family houses, detached .....	10 072 026	5 331 328	1 920 540	2 820 158	1	1	1	1
Single-family houses, attached .....	1 986 343	1 357 851	236 208	392 283	2	2	5	3
Apartment buildings with two or more apartments .....	2 900 532	1 916 529	387 692	596 311	1	1	3	2
Other residential buildings, including hotels and motels .....	1 812 306	1 215 243	288 092	308 970	1	1	2	3
Hotels and motels .....	1 256 221	936 005	163 063	157 152	1	1	1	3
Other residential buildings, excluding hotels and motels .....	556 085	279 238	125 028	151 818	3	3	4	4
Office buildings .....	6 904 019	4 266 382	1 562 020	1 075 616	1	1	1	1
Other commercial buildings such as stores, restaurants, and automobile service stations .....	5 589 589	3 100 048	1 160 695	1 328 847	1	1	1	2
Industrial buildings and warehouses .....	7 417 676	4 055 651	2 066 983	1 295 042	1	1	1	1
Industrial buildings .....	6 355 722	3 311 282	1 886 973	1 157 467	1	1	1	1
Warehouses .....	1 061 954	744 368	180 010	137 575	1	1	3	3
Religious buildings .....	618 341	290 024	144 605	183 712	2	2	2	4
Educational buildings .....	2 260 898	1 183 076	728 746	349 075	1	1	2	2
Hospitals and institutional buildings .....	2 903 744	1 564 234	992 161	347 348	1	1	1	1
Amusement, social, and recreational buildings .....	260 309	143 856	52 238	64 214	2	2	3	4
Other nonresidential buildings .....	507 884	235 245	146 914	125 733	3	3	5	6
<b>Nonbuilding construction</b> .....	3 927 080	2 107 604	938 565	880 910	1	1	1	2
Sewers, water mains, and related facilities .....	788 612	429 296	176 824	182 491	3	3	3	4
Sewers, sewer lines, and related facilities .....	501 554	272 351	99 905	129 298	3	4	5	5
Water mains and related facilities .....	287 057	156 945	76 919	53 192	3	5	2	6
Pipeline, other than sewer or water lines .....	284 720	152 491	69 823	62 405	3	3	4	9
Blast furnaces, petroleum refineries, and chemical complexes .....	724 730	294 573	192 703	237 453	2	2	1	3
Power plants .....	754 733	406 991	178 205	169 535	1	(W)	2	1
Power plants, nuclear .....	185 839	117 594	14 916	53 329	(W)	(W)	1	(W)
Power plants, except nuclear .....	568 893	289 397	163 289	116 206	1	1	2	2
Sewage treatment and water treatment plants .....	797 092	540 112	213 157	43 822	3	3	5	6
Sewage treatment plants .....	465 831	302 067	138 906	24 856	4	5	4	6
Water treatment plants .....	331 261	238 044	74 251	18 966	2	2	7	11
Other nonbuilding construction .....	577 193	284 141	107 853	185 203	4	6	7	6
<b>Construction work, n.s.k.</b> .....	2 342 576	(NA)	(NA)	(NA)	2	(NA)	(NA)	(NA)
<b>1982</b>								
Value of construction work <sup>1</sup> .....	32 661 277	22 814 601	(NA)	9 846 675	(W)	(W)	(NA)	1
<b>Building construction</b> .....	26 744 968	18 509 382	(NA)	8 235 587	(W)	(W)	(NA)	(W)
Single-family houses .....	6 009 631	3 317 033	(NA)	2 692 598	1	1	(NA)	1
Single-family houses, detached .....	5 035 890	2 649 587	(NA)	2 386 303	1	1	(NA)	1
Single-family houses, attached .....	973 741	667 446	(NA)	306 294	1	1	(NA)	2
Apartment buildings with two or more apartments .....	1 916 135	1 327 550	(NA)	588 585	1	1	(NA)	2
Other residential buildings, including hotels and motels .....	858 138	628 443	(NA)	229 695	1	1	(NA)	2
Hotels and motels .....	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
Other residential buildings, excluding hotels and motels .....	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
Office buildings .....	5 034 746	3 864 521	(NA)	1 170 225	(W)	(W)	(NA)	1
Other commercial buildings such as stores, restaurants, and automobile service stations .....	2 389 974	1 552 695	(NA)	837 278	1	1	(NA)	1
Industrial buildings and warehouses .....	5 761 792	4 258 793	(NA)	1 502 999	(W)	(W)	(NA)	1
Industrial buildings .....	5 116 183	3 739 061	(NA)	1 377 121	(W)	(W)	(NA)	1
Warehouses .....	645 608	519 731	(NA)	125 877	1	1	(NA)	2
Religious buildings .....	401 969	239 811	(NA)	162 158	1	1	(NA)	2
Educational buildings .....	1 538 640	1 124 347	(NA)	414 292	1	1	(NA)	2
Hospitals and institutional buildings .....	2 364 260	1 869 709	(NA)	494 550	(W)	(W)	(NA)	1
Amusement, social, and recreational buildings .....	169 010	123 943	(NA)	45 067	3	3	(NA)	4
Other nonresidential buildings .....	300 673	202 537	(NA)	98 140	3	3	(NA)	6
<b>Nonbuilding construction</b> .....	3 038 056	2 179 023	(NA)	859 032	1	(W)	(NA)	1
Sewers, water mains, and related facilities .....	465 005	325 487	(NA)	139 517	2	2	(NA)	4
Sewers, sewer lines, and related facilities .....	281 972	196 252	(NA)	85 720	3	3	(NA)	4
Water mains and related facilities .....	183 032	129 235	(NA)	53 796	4	3	(NA)	6
Blast furnaces, petroleum refineries, and chemical complexes .....	568 551	339 020	(NA)	229 531	(W)	(W)	(NA)	(W)
Power plants .....	1 130 970	811 663	(NA)	319 306	(W)	(W)	(NA)	1
Power plants, nuclear .....	494 208	365 062	(NA)	129 145	(W)	(W)	(NA)	(W)
Power plants, except nuclear .....	636 762	446 600	(NA)	190 161	1	1	(NA)	1
Sewage treatment and water treatment plants .....	568 591	511 517	(NA)	57 073	1	1	(NA)	4
Sewage treatment plants .....	361 517	324 247	(NA)	37 270	1	1	(NA)	5
Water treatment plants .....	207 073	187 270	(NA)	19 803	1	1	(NA)	3
Other nonbuilding construction .....	304 939	191 336	(NA)	113 605	6	7	(NA)	9
<b>Construction work, n.s.k.</b> .....	2 878 252	2 126 194	(NA)	752 055	2	1	(NA)	1

<sup>1</sup>In earlier censuses, construction receipts only were collected. In 1987, the value of construction work was collected to better measure actual construction activity done during the year.

<sup>2</sup>In 1982, data for additions, alterations, or reconstruction were collected separately for SIC 1521, 1522, 1531, 1541, and 1542. For all other industries, data are included with "New construction."



**Table 8. Selected Statistics for Establishments With Payroll by Specialization in Types of Construction: 1987**

[Thousand dollars. Detail may not add to total due to rounding. This table presents selected statistics for establishments according to degree of specialization in major types of construction work. If number of establishments or value of construction work for a given type of specialization are relatively insignificant, data may not be shown. In addition, data are not shown in this table where distribution of the value of construction work by type of construction was not provided in table 7. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Item	Number of establishments	All employees**	Payroll, all employees	Value of construction work		Net value of construction work†	Value added††	Cost of construction work sub-contracted to others	Relative standard error of estimate (percent) for column—		
				For all types	For specialized type				B	D	H
	A	B	C	D	E	F	G	H	B	D	H
All establishments -----	69 566	617 333	14 329 834	49 503 323	23 434 744	44 517 739	25 911 790	4 985 584	(W)	(W)	1
Establishments not specializing by type -----	18 241	242 147	6 056 620	20 659 428	(NA)	18 236 115	10 675 615	2 423 312	1	(W)	1
Establishments specializing 51 percent or more -----	51 324	375 186	8 273 213	28 843 895	23 434 744	26 281 623	15 236 175	2 562 271	1	1	1
SINGLE-FAMILY HOUSES, DETACHED											
All establishments specializing in type -----	26 813	143 185	2 532 343	9 306 118	7 546 500	9 055 119	4 877 729	250 998	1	1	3
Establishments with —											
100 percent specialization -----	7 091	28 610	437 251	1 750 938	1 750 938	1 689 159	871 704	81 778	3	3	9
90 to 99 percent specialization -----	6 180	29 498	523 591	1 975 512	1 842 222	1 931 937	1 044 454	43 575	3	2	8
80 to 89 percent specialization -----	4 759	25 992	472 351	1 700 325	1 400 216	1 660 509	891 588	39 816	3	3	8
70 to 79 percent specialization -----	4 320	26 383	481 191	1 689 068	1 236 427	1 644 975	912 505	44 092	3	3	8
60 to 69 percent specialization -----	3 495	23 722	452 496	1 626 683	1 007 813	1 585 582	859 175	41 100	3	3	5
51 to 59 percent specialization -----	964	8 978	165 462	563 589	308 881	542 954	298 301	20 635	4	4	7
SINGLE-FAMILY HOUSES, ATTACHED											
All establishments specializing in type -----	1 699	11 047	223 328	830 884	668 240	806 601	456 990	24 283	4	4	6
Establishments with —											
100 percent specialization -----	418	1 947	37 552	142 034	142 034	139 638	80 090	2 396	10	10	17
90 to 99 percent specialization -----	382	2 755	58 184	238 397	218 734	233 524	128 430	4 873	8	9	14
80 to 89 percent specialization -----	280	1 791	33 179	110 455	90 884	107 378	65 767	3 076	10	9	20
70 to 79 percent specialization -----	304	1 533	29 705	112 583	81 469	109 965	61 886	2 618	10	10	14
60 to 69 percent specialization -----	195	2 093	46 803	168 918	102 948	160 979	89 865	7 938	9	8	11
51 to 59 percent specialization -----	117	926	17 902	58 495	32 168	55 114	30 949	3 380	13	12	9
APARTMENT BUILDINGS WITH TWO OR MORE APARTMENTS											
All establishments specializing in type -----	1 705	18 087	398 107	1 442 823	1 129 247	1 349 705	770 420	93 118	3	2	4
Establishments with —											
100 percent specialization -----	393	3 440	83 621	309 346	309 346	289 734	168 571	19 612	5	6	13
90 to 99 percent specialization -----	109	1 842	46 171	181 668	168 277	162 050	89 026	19 618	6	5	9
80 to 89 percent specialization -----	368	2 823	59 485	197 794	163 101	188 288	112 225	9 505	7	6	10
70 to 79 percent specialization -----	230	3 498	74 807	291 635	211 358	277 610	165 920	14 025	6	5	5
60 to 69 percent specialization -----	394	4 975	97 545	338 267	209 206	317 736	171 507	20 531	5	4	3
51 to 59 percent specialization -----	208	1 507	36 476	124 111	67 957	114 285	63 169	9 825	8	7	5
HOTELS AND MOTELS											
All establishments specializing in type -----	146	2 663	77 098	277 627	208 913	239 740	151 862	37 886	5	4	2
Establishments with —											
100 percent specialization -----	*23	352	10 937	61 216	61 216	(D)	27 353	(D)	23	12	(D)
90 to 99 percent specialization -----	*7	132	3 317	12 860	11 702	12 648	5 824	212	30	11	12
80 to 89 percent specialization -----	13	423	15 852	46 925	38 206	44 370	26 618	2 555	9	11	22
70 to 79 percent specialization -----	24	363	8 229	35 443	25 895	(D)	19 634	(D)	11	8	(D)
60 to 69 percent specialization -----	34	960	26 295	80 059	49 272	73 620	45 970	6 439	6	5	2
51 to 59 percent specialization -----	44	430	12 467	41 122	22 620	37 886	26 462	3 236	10	6	2
OTHER RESIDENTIAL BUILDINGS, EXCLUDING HOTELS AND MOTELS											
All establishments specializing in type -----	378	2 743	51 275	189 595	148 409	173 502	98 800	16 093	7	8	14
Establishments with —											
100 percent specialization -----	135	767	12 459	49 412	49 412	45 456	27 657	3 955	15	17	29
90 to 99 percent specialization -----	*14	156	3 118	12 716	11 764	12 175	6 852	541	28	25	11
80 to 89 percent specialization -----	61	390	7 969	27 620	22 844	26 001	18 293	*1 619	21	18	51
70 to 79 percent specialization -----	66	560	11 092	35 145	25 839	32 320	17 699	*2 824	16	16	57
60 to 69 percent specialization -----	*80	498	9 844	40 164	25 038	35 610	13 685	4 554	16	21	19
51 to 59 percent specialization -----	*21	370	6 791	24 537	13 511	21 938	14 613	2 599	7	8	2
OFFICE BUILDINGS											
All establishments specializing in type -----	1 487	31 985	955 037	3 416 718	2 589 732	2 897 670	1 711 930	519 047	1	1	1
Establishments with —											
100 percent specialization -----	260	4 606	137 542	567 348	567 348	471 153	249 486	96 194	3	3	5
90 to 99 percent specialization -----	181	3 266	98 410	378 316	349 293	325 085	199 573	53 231	3	5	7
80 to 89 percent specialization -----	235	4 318	129 574	386 745	316 700	341 561	212 037	45 183	3	3	2
70 to 79 percent specialization -----	377	8 311	245 870	846 479	611 389	694 872	425 183	151 606	2	2	2
60 to 69 percent specialization -----	320	8 440	247 612	919 857	570 398	782 285	447 236	137 571	2	2	3
51 to 59 percent specialization -----	113	3 042	96 026	317 971	174 601	282 710	178 413	35 260	4	3	3
OTHER COMMERCIAL BUILDINGS SUCH AS STORES, RESTAURANTS, AND AUTOMOBILE SERVICE STATIONS											
All establishments specializing in type -----	3 667	33 115	773 274	2 652 090	2 122 847	2 418 522	1 384 587	233 568	2	2	2
Establishments with —											
100 percent specialization -----	1 144	9 072	240 661	846 172	846 172	775 661	430 833	70 511	3	3	4
90 to 99 percent specialization -----	531	3 284	70 827	245 012	227 401	223 198	128 569	21 813	7	6	8
80 to 89 percent specialization -----	448	4 553	101 114	325 998	265 454	304 197	171 859	21 801	6	5	9
70 to 79 percent specialization -----	643	5 480	114 721	389 117	282 961	348 137	204 570	40 979	5	4	3
60 to 69 percent specialization -----	606	7 283	171 664	580 229	355 997	520 248	308 062	59 981	4	3	3
51 to 59 percent specialization -----	293	3 440	74 285	265 560	144 859	247 079	140 691	18 481	5	5	2



**Table 8. Selected Statistics for Establishments With Payroll by Specialization in Types of Construction: 1987—Con.**

[Thousand dollars. Detail may not add to total due to rounding. This table presents selected statistics for establishments according to degree of specialization in major types of construction work. If number of establishments or value of construction work for a given type of specialization are relatively insignificant, data may not be shown. In addition, data are not shown in this table where distribution of the value of construction work by type of construction was not provided in table 7. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Item	Number of establishments	All employees**	Payroll, all employees	Value of construction work		Net value of construction work†	Value added††	Cost of construction work sub-contracted to others	Relative standard error of estimate (percent) for column—		
				For all types	For specialized type				B	D	H
A	B	C	D	E	F	G	H	B	D	H	
INDUSTRIAL BUILDINGS											
All establishments specializing in type .....	2 228	42 740	1 217 956	3 877 361	3 088 065	3 315 404	2 089 350	561 957	1	1	2
Establishments with —											
100 percent specialization .....	874	14 425	384 047	1 161 762	1 161 762	1 024 395	656 653	137 367	2	2	4
90 to 99 percent specialization .....	192	4 409	123 166	350 209	324 515	292 798	194 674	57 411	4	3	2
80 to 89 percent specialization .....	310	4 657	127 128	409 084	333 879	349 732	216 420	59 352	3	3	8
70 to 79 percent specialization .....	413	7 153	213 885	704 614	512 241	604 265	393 723	100 348	3	3	3
60 to 69 percent specialization .....	341	9 485	293 009	984 643	610 421	830 983	496 476	153 659	2	2	2
51 to 59 percent specialization .....	95	2 609	76 718	267 047	145 245	213 228	131 401	53 818	4	3	3
WAREHOUSES											
All establishments specializing in type .....	161	2 132	53 490	203 650	154 420	190 993	119 512	12 657	6	7	16
Establishments with —											
100 percent specialization .....	27	410	12 399	48 897	48 897	44 753	25 754	4 144	18	15	35
90 to 99 percent specialization .....	*13	*71	2 125	*9 300	8 544	(D)	3 786	(D)	43	42	(D)
80 to 89 percent specialization .....	23	197	5 104	26 588	21 936	(D)	18 770	(D)	16	22	(D)
70 to 79 percent specialization .....	17	321	8 547	29 322	21 163	27 817	15 756	1 505	9	11	8
60 to 69 percent specialization .....	43	836	19 486	65 480	40 228	61 648	43 051	3 831	8	9	34
51 to 59 percent specialization .....	36	294	5 826	24 060	13 650	23 342	12 393	*718	20	22	65
EDUCATIONAL BUILDINGS											
All establishments specializing in type .....	642	7 228	169 583	694 811	520 022	568 536	315 835	126 274	4	4	5
Establishments with —											
100 percent specialization .....	131	1 144	23 357	97 949	97 949	80 871	41 812	17 077	12	13	25
90 to 99 percent specialization .....	57	519	14 446	57 673	52 884	46 485	24 851	11 188	14	14	16
80 to 89 percent specialization .....	61	1 382	33 188	135 821	110 547	112 104	64 264	23 717	4	4	5
70 to 79 percent specialization .....	103	1 521	35 880	150 425	108 524	124 967	74 967	25 457	9	8	11
60 to 69 percent specialization .....	153	1 650	37 727	149 999	93 957	122 712	66 186	27 286	9	9	10
51 to 59 percent specialization .....	135	1 009	24 983	102 942	56 158	81 395	43 755	21 546	10	8	11
HOSPITALS AND INSTITUTIONAL BUILDINGS											
All establishments specializing in type .....	527	8 038	221 136	832 878	582 323	664 614	388 425	168 263	2	2	3
Establishments with —											
100 percent specialization .....	110	664	17 757	65 396	65 396	55 488	32 898	9 908	9	9	14
90 to 99 percent specialization .....	22	444	10 624	28 405	26 454	24 424	12 965	3 980	10	11	9
80 to 89 percent specialization .....	41	753	22 432	96 984	78 632	75 601	44 349	21 383	9	6	2
70 to 79 percent specialization .....	106	1 888	54 025	194 571	140 696	157 374	92 052	37 197	4	6	9
60 to 69 percent specialization .....	190	3 203	84 405	319 340	201 112	256 685	155 657	62 655	4	3	4
51 to 59 percent specialization .....	55	1 083	31 891	128 180	70 031	95 041	50 502	33 139	7	6	6
SEWERS, SEWER LINES, AND RELATED FACILITIES											
All establishments specializing in type .....	818	3 327	59 403	227 187	201 368	216 968	151 541	10 219	8	7	12
Establishments with —											
100 percent specialization .....	516	2 064	34 806	131 843	131 843	128 091	86 197	3 751	9	9	18
90 to 99 percent specialization .....	95	287	4 538	21 478	20 385	21 064	15 263	414	26	27	37
80 to 89 percent specialization .....	89	244	4 507	16 368	13 285	15 255	11 413	1 113	25	24	37
70 to 79 percent specialization .....	39	159	3 439	17 849	12 824	(D)	11 502	(D)	34	36	(D)
60 to 69 percent specialization .....	53	359	6 614	26 141	15 990	25 101	14 813	1 040	30	24	18
51 to 59 percent specialization .....	25	212	5 499	13 506	7 038	(D)	12 350	(D)	16	10	(D)
PIPELINE, OTHER THAN SEWER OR WATER LINES											
All establishments specializing in type .....	145	2 548	66 595	192 651	165 182	168 664	113 448	23 987	7	5	6
Establishments with —											
100 percent specialization .....	96	1 302	28 705	81 660	81 660	72 982	47 405	8 678	12	10	17
90 to 99 percent specialization .....	12	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
80 to 89 percent specialization .....	11	196	6 714	26 328	21 616	23 424	11 659	2 904	17	12	15
70 to 79 percent specialization .....	*5	314	11 868	35 889	25 293	(D)	20 142	(D)	7	3	(D)
60 to 69 percent specialization .....	*18	305	9 434	28 633	17 956	24 583	17 999	4 050	14	6	4
51 to 59 percent specialization .....	1	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
BLAST FURNACES, PETROLEUM REFINERIES, AND CHEMICAL COMPLEXES											
All establishments specializing in type .....	124	6 633	213 441	582 163	508 827	490 942	360 102	91 220	1	2	1
Establishments with —											
100 percent specialization .....	62	3 057	100 599	282 303	282 303	249 813	171 405	32 490	2	5	2
90 to 99 percent specialization .....	15	1 644	44 525	103 386	94 976	90 047	68 958	13 338	2	2	(W)
80 to 89 percent specialization .....	25	463	15 833	36 672	30 215	33 332	27 727	3 339	13	8	3
70 to 79 percent specialization .....	10	469	13 342	45 714	33 045	34 728	24 253	10 986	(W)	(W)	(W)
60 to 69 percent specialization .....	7	790	34 437	(D)	(D)	(D)	(D)	(D)	2	(D)	(D)
51 to 59 percent specialization .....	3	207	4 704	(D)	(D)	(D)	(D)	(D)	(W)	(D)	(D)
POWER PLANTS, EXCEPT NUCLEAR											
All establishments specializing in type .....	64	6 543	182 437	413 157	283 592	372 641	228 440	40 515	1	1	1
Establishments with —											
100 percent specialization .....	21	527	15 657	42 092	42 092	36 805	25 317	5 286	6	6	6
90 to 99 percent specialization .....	*12	227	5 146	11 673	10 676	9 778	8 250	1 894	25	28	21
80 to 89 percent specialization .....	2	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
70 to 79 percent specialization .....	*16	937	36 806	67 026	47 720	59 012	46 812	8 013	2	4	3
60 to 69 percent specialization .....	3	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
51 to 59 percent specialization .....	8	381	10 796	40 379	23 197	36 676	13 445	3 703	(W)	(W)	(W)



**Table 8. Selected Statistics for Establishments With Payroll by Specialization in Types of Construction: 1987—Con.**

[Thousand dollars. Detail may not add to total due to rounding. This table presents selected statistics for establishments according to degree of specialization in major types of construction work. If number of establishments or value of construction work for a given type of specialization are relatively insignificant, data may not be shown. In addition, data are not shown in this table where distribution of the value of construction work by type of construction was not provided in table 7. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Appendix

Item	Number of establishments	All employees**	Payroll, all employees	Value of construction work		Net value of construction work†	Value added††	Cost of construction work sub-contracted to others	Relative standard error of estimate (percent) for column—		
				For all types	For specialized type				B	D	H
A	B	C	D	E	F	G	H	B	D	H	
SEWAGE TREATMENT PLANTS											
All establishments specializing in type-----	124	1 285	46 103	202 334	156 626	155 375	85 200	46 959	7	8	8
Establishments with —											
100 percent specialization-----	29	195	5 843	*29 260	29 260	23 886	8 217	*5 374	31	46	65
90 to 99 percent specialization-----	*19	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
80 to 89 percent specialization-----	*3	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
70 to 79 percent specialization-----	42	521	20 602	86 944	62 645	65 998	42 241	20 946	9	8	2
60 to 69 percent specialization-----	7	226	8 896	41 864	25 518	33 510	15 973	8 354	6	4	2
51 to 59 percent specialization-----	*22	*44	*220	*1 034	*527	*1 034	*726	—	48	48	—
WATER MAINS AND RELATED FACILITIES											
All establishments specializing in type-----	273	1 222	20 935	78 620	68 783	73 791	45 593	4 828	11	10	13
Establishments with —											
100 percent specialization-----	225	859	13 516	44 833	44 833	43 194	24 359	1 638	15	15	21
90 to 99 percent specialization-----	4	61	1 462	5 911	5 445	(D)	3 673	(D)	26	29	(D)
80 to 89 percent specialization-----	3	63	1 244	2 199	1 877	2 046	1 779	153	(W)	(W)	(W)
70 to 79 percent specialization-----	*5	68	1 441	5 165	3 686	(D)	2 636	(D)	34	22	(D)
60 to 69 percent specialization-----	*34	169	3 272	20 512	12 940	18 576	13 146	1 935	25	14	8
51 to 59 percent specialization-----	—	—	—	—	—	—	—	—	—	—	—

**Table 9. Quarterly Construction Worker Hours and Employment for Establishments With**

[Detail may not add to total due to rounding. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Location of establishment	Number of establishments	Average number of construction workers	Construction worker hours (thousands)	January to March		April to June	
				Construction workers <sup>1</sup>	Hours worked (thousands)	Construction workers <sup>1</sup>	Hours worked (thousands)
	A	B	C	D	E	F	G
<b>United States -----</b>	<b>69 566</b>	<b>470 793</b>	<b>844 750</b>	<b>452 744</b>	<b>197 416</b>	<b>469 279</b>	<b>210 144</b>
Alabama -----	1 067	7 282	12 977	6 766	2 904	7 487	3 386
Alaska -----	173	632	1 199	505	254	593	276
Arizona -----	1 086	8 178	14 154	8 086	3 403	8 147	3 581
Arkansas -----	634	2 931	5 414	2 818	1 274	2 956	1 341
California -----	6 332	49 300	84 616	47 691	20 016	49 667	21 278
Colorado -----	1 230	7 788	11 537	7 649	2 741	8 032	2 993
Connecticut -----	1 285	8 394	15 727	8 215	3 818	8 350	3 865
Delaware -----	257	2 115	4 004	2 045	921	2 032	976
District of Columbia -----	48	901	1 526	917	373	922	383
Florida -----	4 337	32 295	58 741	31 431	13 961	31 863	14 465
Georgia -----	1 942	14 971	26 629	14 820	6 450	15 056	6 697
Hawaii -----	194	1 519	2 923	1 604	740	1 527	744
Idaho -----	293	1 239	2 016	1 198	480	1 296	530
Illinois -----	3 116	21 487	38 659	20 950	9 174	21 481	9 615
Indiana -----	1 513	11 108	20 202	10 701	4 743	11 101	5 054
Iowa -----	799	3 773	6 478	3 513	1 478	3 700	1 546
Kansas -----	847	4 361	7 711	4 111	1 772	4 399	1 893
Kentucky -----	945	6 423	11 811	5 938	2 668	6 376	2 929
Louisiana -----	919	4 825	8 597	5 002	2 127	4 937	2 193
Maine -----	421	2 192	4 008	2 130	975	2 201	1 028
Maryland -----	1 580	16 512	31 151	15 834	7 383	16 232	7 764
Massachusetts -----	2 173	13 593	25 004	12 902	5 777	13 393	6 183
Michigan -----	2 275	14 687	26 689	13 583	6 029	14 272	6 413
Minnesota -----	1 192	8 496	15 567	7 841	3 461	8 634	3 899
Mississippi -----	541	3 007	5 716	2 944	1 412	3 001	1 449
Missouri -----	1 420	9 722	17 604	9 417	4 185	9 635	4 356
Montana -----	241	730	1 216	697	252	756	320
Nebraska -----	523	2 658	4 820	2 410	1 087	3 067	1 280
Nevada -----	298	2 398	3 788	2 279	833	2 318	925
New Hampshire -----	522	2 950	5 352	2 850	1 247	2 933	1 337
New Jersey -----	3 040	18 364	33 978	17 606	8 029	18 210	8 448
New Mexico -----	511	2 490	4 612	2 424	1 110	2 509	1 195
New York -----	4 640	31 541	58 239	30 314	13 523	31 309	14 356
North Carolina -----	2 332	16 717	30 795	15 972	7 109	16 546	7 660
North Dakota -----	233	913	1 405	819	330	946	357
Ohio -----	2 695	20 692	37 593	19 347	8 547	20 026	8 973
Oklahoma -----	890	3 691	6 479	3 755	1 595	4 187	1 738
Oregon -----	632	3 374	5 450	3 122	1 213	3 450	1 366
Pennsylvania -----	3 180	21 507	38 918	20 474	9 058	21 140	9 487
Rhode Island -----	309	1 398	2 251	1 334	526	1 362	567
South Carolina -----	1 060	8 279	14 932	8 104	3 555	8 142	3 707
South Dakota -----	215	841	1 441	856	352	878	374
Tennessee -----	1 200	9 677	17 446	9 197	3 943	9 636	4 318
Texas -----	4 519	27 533	49 414	27 029	11 481	27 528	12 471
Utah -----	462	2 875	4 853	2 857	1 148	2 969	1 262
Vermont -----	316	1 340	2 328	1 272	540	1 311	586
Virginia -----	1 954	16 277	29 168	15 791	6 807	16 277	7 263
Washington -----	1 097	6 219	10 429	5 889	2 316	6 145	2 677
West Virginia -----	352	1 757	3 242	1 570	722	1 732	770
Wisconsin -----	1 551	8 249	15 049	7 602	3 353	8 022	3 623
Wyoming -----	151	567	867	542	197	572	220

<sup>1</sup>Construction workers during pay periods including 12th of March, May, August, and November.



Payroll by State: 1987

July to September		October to December		Relative standard error of estimate (percent) for column—										Location of establishment
Construction workers¹	Hours worked (thousands)	Construction workers¹	Hours worked (thousands)											
H	I	J	K	B	C	D	E	F	G	H	I	J	K	
491 584	223 258	469 567	213 931	(W)	(W)	(W)	(W)	(W)	(W)	(W)	(W)	(W)	(W)	U.S.
7 676	3 411	7 197	3 275	2	3	2	3	2	3	3	3	3	3	AL
801	363	628	305	8	10	9	11	9	11	8	9	10	10	AK
8 397	3 609	8 083	3 560	2	3	2	3	2	3	2	4	3	4	AZ
3 106	1 442	2 842	1 356	5	6	5	7	5	7	5	7	4	6	AR
50 785	22 110	49 057	21 210	1	1	1	1	1	1	1	1	1	1	CA
8 181	2 993	7 290	2 808	2	3	3	4	3	4	3	4	3	4	CO
8 615	4 059	8 397	3 983	2	3	2	2	2	3	2	3	2	3	CT
2 159	1 045	2 223	1 060	4	6	4	6	4	6	4	6	4	6	DE
924	397	839	371	3	5	3	5	3	5	3	6	3	6	DC
33 184	15 360	32 701	14 954	1	2	1	2	1	2	1	2	2	2	FL
15 709	7 056	14 302	6 425	2	3	2	3	2	3	2	3	2	3	GA
1 497	731	1 449	707	3	6	3	5	3	5	3	6	5	7	HI
1 323	549	1 138	456	5	7	5	7	5	7	6	8	6	8	ID
22 329	10 199	21 188	9 669	1	1	1	1	1	1	1	2	1	2	IL
11 678	5 311	10 952	5 092	2	2	2	2	2	2	2	3	2	3	IN
3 980	1 702	3 901	1 751	3	4	4	4	3	4	3	4	3	4	IA
4 514	2 014	4 422	2 030	3	5	3	5	3	4	3	5	4	5	KS
6 889	3 187	6 492	3 025	3	4	4	4	3	4	3	4	3	5	KY
4 904	2 246	4 456	2 028	4	5	6	5	5	5	3	5	4	6	LA
2 232	1 031	2 203	974	5	7	6	8	5	7	5	7	5	8	ME
17 147	8 054	16 837	7 948	1	2	1	2	1	2	1	2	1	2	MD
14 652	6 755	13 426	6 287	2	2	2	2	2	2	3	4	2	2	MA
15 737	7 254	15 158	6 991	2	2	2	2	2	2	2	2	2	2	MI
9 038	4 199	8 472	4 006	2	2	2	2	2	2	2	2	2	3	MN
3 137	1 483	2 946	1 371	4	5	4	5	4	5	4	5	4	5	MS
10 009	4 564	9 828	4 497	2	2	2	2	2	3	2	3	2	3	MO
717	325	750	318	7	9	8	10	10	14	7	11	8	11	MT
2 691	1 261	2 463	1 191	7	6	4	5	18	12	4	5	4	6	NE
2 539	1 024	2 458	1 003	4	5	5	6	4	5	4	6	4	6	NV
3 077	1 398	2 940	1 368	4	5	5	5	4	5	4	5	5	6	NH
19 126	8 927	18 515	8 573	1	2	1	2	1	2	1	2	2	2	NJ
2 599	1 201	2 427	1 104	5	6	5	7	5	7	5	7	5	7	NM
32 590	15 306	31 952	15 053	1	1	1	1	1	1	1	1	1	2	NY
17 569	8 183	16 784	7 842	2	2	2	2	2	2	2	2	2	2	NC
954	371	931	347	7	10	8	11	7	10	7	10	7	10	ND
22 374	10 389	21 021	9 683	1	2	1	2	1	2	2	3	1	2	OH
3 646	1 647	3 174	1 498	3	5	3	5	3	5	4	5	4	6	OK
3 529	1 471	3 397	1 399	3	4	3	4	3	5	3	5	3	5	OR
22 449	10 182	21 965	10 190	1	2	1	2	1	2	1	2	1	2	PA
1 447	570	1 450	587	5	8	6	10	6	9	5	8	5	9	RI
8 657	3 963	8 212	3 705	2	3	2	3	2	3	3	4	3	3	SC
864	370	765	344	8	11	7	10	8	11	9	13	9	13	SD
10 197	4 717	9 680	4 467	2	3	2	3	2	3	2	3	2	3	TN
28 985	13 255	26 591	12 205	1	2	1	2	1	2	1	2	1	2	TX
2 780	1 216	2 893	1 226	7	7	9	8	9	7	4	7	9	8	UT
1 425	614	1 353	586	6	8	7	9	6	8	6	7	7	9	VT
16 836	7 660	16 205	7 437	2	2	2	2	2	2	2	2	2	2	VA
6 555	2 831	6 287	2 603	2	3	2	3	3	3	2	3	3	3	WA
1 923	903	1 805	846	7	8	7	9	7	7	7	9	7	9	WV
8 865	4 110	8 507	3 963	2	2	2	3	2	3	2	2	2	3	WI
564	216	592	231	10	14	11	14	10	14	12	15	13	17	WY

**Table 10. Value of Construction Work for Establishments With Payroll by Location of Construction Work: 1987 and 1982**

[Thousand dollars. Detail may not add to total due to rounding. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Location of construction work	1987					1982 construction receipts for work done in this State¹	Percent change 1987 (col A) to 1982 (col F)	Relative standard error of estimate (percent) for column—		
	Value of construction work done in this State¹	Construction work done by establishments located in this State		Construction work done by establishments not located in this State						
		Number	Value of construction work	Number	Value of construction work					
A	B	C	D	E	F	G	A	C	E	
United States -----	49 503 324	69 049	45 686 578	11 107	3 816 745	32 661 277	51.6	(W)	(W)	1
Alabama -----	631 372	1 067	558 431	287	72 940	317 282	99.0	2	2	11
Alaska -----	126 119	110	101 052	35	25 066	190 804	-33.9	7	8	2
Arizona -----	779 058	1 085	730 519	192	48 538	464 718	67.6	2	2	10
Arkansas -----	258 711	630	235 504	176	23 207	179 899	43.8	5	5	7
California -----	6 050 058	6 298	5 859 229	227	190 828	3 482 603	73.7	1	1	2
Colorado -----	642 080	1 214	572 383	115	69 696	702 256	-8.6	2	2	1
Connecticut -----	943 951	1 265	869 196	170	74 755	488 624	93.2	2	2	2
Delaware -----	209 466	248	177 543	169	31 923	91 123	129.9	3	3	9
District of Columbia -----	322 183	48	58 034	498	264 149	196 930	63.6	2	4	2
Florida -----	2 843 892	4 325	2 706 611	243	137 280	1 883 725	51.0	1	1	6
Georgia -----	1 505 509	1 937	1 325 935	406	179 573	751 683	100.3	2	2	2
Hawaii -----	227 385	194	204 341	24	23 044	188 811	20.4	2	2	4
Idaho -----	141 715	293	113 130	86	28 584	115 744	22.4	4	5	7
Illinois -----	2 707 387	3 105	2 508 593	463	198 793	1 536 466	76.2	1	1	2
Indiana -----	1 120 209	1 507	1 031 682	366	88 526	799 293	40.1	1	1	4
Iowa -----	368 550	791	331 376	155	37 173	297 948	23.7	3	3	4
Kansas -----	509 764	847	356 121	365	153 643	336 623	51.4	2	3	3
Kentucky -----	572 253	945	490 872	365	81 381	403 548	41.8	3	3	4
Louisiana -----	473 611	897	437 551	155	36 059	633 512	-25.2	2	2	1
Maine -----	224 326	421	199 617	76	24 709	111 124	101.9	4	4	3
Maryland -----	1 386 179	1 525	1 276 506	317	109 673	725 147	91.2	2	2	4
Massachusetts -----	1 577 616	2 171	1 492 443	321	85 172	806 715	95.6	2	2	11
Michigan -----	1 764 928	2 271	1 714 944	183	49 984	915 924	92.7	1	1	4
Minnesota -----	1 024 134	1 186	974 474	188	49 660	667 402	53.5	1	2	3
Mississippi -----	242 424	539	197 252	126	45 171	175 947	37.8	4	5	4
Missouri -----	1 041 497	1 414	964 450	354	77 047	611 922	70.2	1	2	3
Montana -----	89 944	241	69 858	35	20 085	84 445	6.5	6	6	19
Nebraska -----	237 583	523	219 846	143	17 737	199 754	18.9	4	5	4
Nevada -----	280 798	298	248 719	166	32 079	202 137	38.9	3	4	5
New Hampshire -----	329 579	522	289 384	255	40 195	113 423	190.6	3	4	5
New Jersey -----	2 268 884	3 020	2 101 801	472	167 083	1 156 534	96.2	1	1	3
New Mexico -----	225 078	511	201 856	121	23 222	205 088	9.7	3	4	7
New York -----	3 891 647	4 617	3 807 653	310	83 993	2 306 611	68.7	1	1	3
North Carolina -----	1 318 179	2 311	1 237 636	253	80 543	748 246	76.2	2	2	2
North Dakota -----	91 419	228	78 407	51	13 011	126 705	-27.8	5	6	12
Ohio -----	1 856 554	2 685	1 746 540	292	110 013	1 389 998	33.6	1	1	5
Oklahoma -----	353 946	890	319 308	173	34 638	479 439	-26.2	3	4	6
Oregon -----	336 541	615	317 301	106	19 239	225 001	49.6	3	3	7
Pennsylvania -----	2 244 509	3 167	2 156 298	399	88 211	1 676 161	33.9	1	1	4
Rhode Island -----	152 133	309	140 496	125	11 636	86 878	75.1	4	5	22
South Carolina -----	671 086	1 050	571 286	334	99 800	414 927	61.7	2	3	5
South Dakota -----	76 225	215	64 568	104	11 657	65 576	16.2	7	8	19
Tennessee -----	868 468	1 183	805 137	177	63 330	500 866	73.4	2	2	4
Texas -----	2 559 131	4 449	2 434 803	174	124 327	2 984 754	-14.3	1	1	4
Utah -----	276 064	462	255 723	15	20 341	211 011	30.8	3	3	2
Vermont -----	131 223	316	117 456	54	13 767	52 521	149.8	6	7	6
Virginia -----	1 607 260	1 939	1 264 157	603	343 102	817 782	96.5	1	2	2
Washington -----	767 183	1 094	694 024	235	73 159	598 939	28.1	3	3	5
West Virginia -----	191 178	350	122 432	230	68 746	151 556	26.1	4	6	2
Wisconsin -----	920 086	1 547	885 850	131	34 236	654 867	40.5	2	2	4
Wyoming -----	64 221	151	48 225	65	15 995	132 261	-51.4	11	12	21

<sup>1</sup>In earlier censuses, construction receipts only were collected. In 1987, the value of construction work was collected to better measure actual construction activity done during the year.



**Table 11. Dollar Value of Business Done for Establishments With Payroll by Kind of Business Activity: 1987 and 1982**

[Thousand dollars. Detail may not add to total due to rounding. Based on their primary business activity or combination of activities, establishments were classified into this specific industry. These establishments, however, may also be engaged in other kinds of business activities. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Primary and other kinds of business activities	Dollar value of business done <sup>1</sup>		Relative standard error of estimate (percent)	
	1987	1982	1987	1982
<b>All kinds of business .....</b>	<b>50 219 653</b>	<b>33 521 439</b>	<b>(W)</b>	<b>(W)</b>
General building contractor .....	142 723	242 654	6	1
Heavy construction .....	116 330	415 113	4	2
Air-conditioning contractor .....	2 620 967	7 502 028	1	(W)
Building sprinkler system contractor .....	1 958 583	(NA)	1	(NA)
Energy management contractor .....	100 930	(NA)	7	(NA)
Heating contractor .....	2 560 180	6 063 672	1	1
Lawn sprinkler system contractor .....	317 426	(NA)	5	(NA)
Mechanical contractor .....	9 045 153	1 776 575	1	(W)
Plumbing contractor .....	13 405 954	10 740 934	1	1
Refrigeration contractor .....	1 182 185	906 164	3	2
Septic system contractor .....	445 401	(NA)	5	(NA)
Steam fitting and piping contractor .....	2 007 749	(NA)	1	(NA)
Heating, ventilation, and air-conditioning contractor .....	13 278 915	(NA)	1	(NA)
Electrical contractor .....	394 461	486 221	2	1
Sheet metal contractor .....	987 800	1 306 705	1	1
Other construction activities .....	520 952	(S)	4	(S)
Manufacturing .....	68 018	(S)	4	(S)
Retail trade .....	297 014	168 357	3	3
Wholesale trade .....	63 527	(S)	4	(S)
Other activities .....	278 501	(S)	2	(S)
Kind of business activity, n.s.k. ....	426 884	(S)	5	(S)

<sup>1</sup>In earlier censuses, construction receipts only were collected. In 1987, the value of construction work was collected to better measure actual construction activity done during the year.

**Table 12. Selected Industry Ratios for Establishments With Payroll: 1987 and 1982**

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Selected statistics	1987	1982	Relative standard error of estimate (percent) for 1987
<b>AVERAGE PER ESTABLISHMENT</b>			
Number of employees**	8.9	8.5	(W)
Number of construction workers	6.8	6.6	(W)
Number of all other employees	2.1	(NA)	(W)
Payroll, all employees	\$1,000 206.0	163.7	(W)
Payroll, construction workers	do 148.2	124.1	(W)
Payroll, other employees	do 57.8	39.6	(W)
Dollar value of business done	do 721.9	556.4	(W)
Value of construction work <sup>1</sup>	do 711.6	542.2	(W)
Cost of materials, components, supplies, and fuels	do 277.8	211.6	(W)
Construction work subcontracted to others	do 71.7	63.3	1
Rental cost for machinery, equipment, and buildings	do 9.6	6.1	1
Capital expenditures, other than land	do 10.4	7.3	1
Gross book value of depreciable assets	do 71.9	76.0	1
<b>AVERAGE PER EMPLOYEE</b>			
Payroll, all employees	do 23.2	19.3	(W)
Dollar value of business done	do 81.3	65.5	(W)
Value added††	do 42.0	33.1	(W)
<b>AVERAGE PER CONSTRUCTION WORKER</b>			
Payroll, construction workers	do 21.9	18.8	(W)
Value of construction work <sup>1</sup>	do 105.1	82.2	(W)
Construction worker hours	1 794.3	1 649.7	(W)
<b>AVERAGE PER OTHER EMPLOYEE</b>			
Payroll, other employees	\$1,000 27.4	(NA)	(W)
<b>AVERAGE PER DOLLAR VALUE OF CONSTRUCTION WORK<sup>1</sup></b>			
Payroll, all employees	.289	.302	(W)
Cost of materials, components, supplies, and fuels	.390	.390	(W)
Cost of construction work subcontracted to others	.101	.117	(W)
Rental cost for machinery, equipment, and buildings	.013	.011	1

<sup>1</sup>In earlier censuses, construction receipts only were collected. In 1987, the value of construction work was collected to better measure actual construction activity done during the year.



**Table 13. Selected Industry Ratios for Establishments With Payroll by State: 1987**

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Location of establishment	Average number of employees** per establishment	Payroll per employee (\$1,000)	Construction worker hours per construction worker	Value of construction work per construction worker (\$1,000)	Average per dollar of value of construction work			
					Payroll, all employees	Cost of materials, components, supplies, and fuels	Cost of construction work sub-contracted to others	Rental cost for machinery, equipment, and buildings
<b>United States</b> -----	<b>8.9</b>	<b>23.2</b>	<b>1 794.3</b>	<b>105.1</b>	<b>.289</b>	<b>.390</b>	<b>.101</b>	<b>.013</b>
Alabama -----	8.6	18.6	1 782.1	81.9	.287	.438	.067	.013
Alaska -----	5.0	30.6	1 897.2	166.1	.254	.332	.173	.020
Arizona -----	9.7	20.6	1 730.7	92.7	.286	.431	.075	.017
Arkansas -----	5.9	17.8	1 847.2	89.2	.257	.484	.087	.013
California -----	10.2	27.5	1 718.3	121.2	.298	.368	.083	.016
Colorado -----	8.3	17.5	1 481.4	81.5	.282	.404	.138	.018
Connecticut -----	8.6	26.9	1 873.8	113.1	.315	.382	.099	.014
Delaware -----	10.3	21.7	1 893.1	93.5	.292	.379	.114	.014
District of Columbia -----	24.4	27.2	1 693.7	104.9	.337	.314	.145	.013
Florida -----	9.8	18.7	1 818.9	86.5	.284	.435	.073	.014
Georgia -----	10.0	19.5	1 778.7	96.0	.263	.439	.096	.013
Hawaii -----	10.7	29.9	1 924.3	134.5	.305	.300	.097	.019
Idaho -----	5.7	19.2	1 627.1	94.4	.271	.429	.077	.012
Illinois -----	9.1	28.6	1 799.2	120.8	.313	.370	.101	.012
Indiana -----	9.8	24.3	1 818.7	108.1	.298	.385	.106	.011
Iowa -----	6.4	21.0	1 718.9	97.8	.288	.435	.104	.013
Kansas -----	6.9	21.1	1 768.2	92.2	.305	.382	.071	.014
Kentucky -----	8.6	18.1	1 838.9	84.6	.271	.408	.091	.011
Louisiana -----	7.1	18.4	1 781.8	95.9	.257	.403	.130	.016
Maine -----	6.8	20.2	1 828.5	94.2	.281	.413	.095	.013
Maryland -----	13.4	22.8	1 886.6	105.8	.277	.360	.143	.011
Massachusetts -----	8.2	25.6	1 839.5	115.0	.291	.372	.109	.012
Michigan -----	8.6	25.2	1 817.2	120.7	.279	.369	.111	.013
Minnesota -----	9.4	28.3	1 832.3	123.3	.304	.378	.119	.011
Mississippi -----	6.9	17.5	1 900.9	86.3	.253	.411	.100	.008
Missouri -----	9.2	26.8	1 810.7	124.3	.290	.373	.167	.012
Montana -----	4.3	19.3	1 665.8	101.2	.271	.382	.130	.017
Nebraska -----	6.9	19.0	1 813.4	95.7	.269	.427	.084	.013
Nevada -----	10.3	25.1	1 579.6	111.0	.289	.417	.053	.014
New Hampshire -----	7.3	23.1	1 814.2	104.8	.284	.413	.098	.015
New Jersey -----	7.8	26.5	1 850.3	118.0	.291	.378	.100	.012
New Mexico -----	6.4	16.8	1 852.2	82.4	.268	.375	.115	.018
New York -----	9.1	26.8	1 846.5	125.3	.285	.344	.125	.012
North Carolina -----	9.2	18.3	1 842.1	82.6	.285	.435	.071	.012
North Dakota -----	5.3	18.6	1 538.9	100.0	.251	.442	.133	.011
Ohio -----	10.1	24.1	1 816.8	97.5	.325	.387	.107	.012
Oklahoma -----	5.5	18.8	1 755.4	96.9	.256	.400	.098	.015
Oregon -----	7.3	23.4	1 615.3	111.9	.287	.382	.104	.015
Pennsylvania -----	8.7	25.0	1 809.6	108.9	.295	.370	.106	.012
Rhode Island -----	6.1	23.2	1 610.2	123.7	.252	.396	.145	.013
South Carolina -----	9.9	17.4	1 803.8	80.8	.274	.455	.079	.011
South Dakota -----	5.5	16.1	1 713.4	91.1	.251	.471	.060	.012
Tennessee -----	10.3	19.2	1 802.8	92.2	.267	.443	.092	.012
Texas -----	8.1	21.0	1 794.7	97.6	.284	.421	.096	.016
Utah -----	8.2	19.4	1 688.0	104.8	.243	.406	.150	.013
Vermont -----	5.4	18.7	1 737.3	96.5	.247	.434	.095	.011
Virginia -----	10.8	19.9	1 792.0	85.1	.302	.421	.076	.011
Washington -----	7.7	25.2	1 677.0	121.7	.280	.369	.113	.015
West Virginia -----	6.3	19.2	1 845.2	78.7	.311	.403	.071	.012
Wisconsin -----	7.2	24.6	1 824.3	114.4	.292	.410	.074	.014
Wyoming -----	5.0	17.8	1 529.1	89.8	.263	.376	.137	.010





# APPENDIX A.

## Explanation of Terms

**Construction**—Is composed of three broad categories:

1. **New construction**—Includes the complete, original erection of structures and essential service facilities and the initial installation of integral equipment such as elevators, and plumbing, heating, and air-conditioning supplies and equipment.
2. **Additions, alterations or reconstruction**—Includes construction activity making structural changes to existing facilities. Generally, this type of activity is considered a capital investment in the property.
3. **Maintenance and repair**—Includes construction done for the purpose of upkeep of property rather than additional investment in the property.

Examples of the general distinction between maintenance and repair and reconstruction are provided here: roof repairs, including the replacement of shingles, gutters, etc., are classified under maintenance and repairs. A complete reroofing, however, is classified as reconstruction.

**Number of establishments in business during year**—Includes all establishments that were in business at any time during the year. It covers all full-year and part-year operations. Construction establishments which were inactive or idle for the entire year were not included.

**Proprietors and working partners**—These data were not collected on the census report forms. The data shown are based on crediting each sole proprietorship establishment with one active proprietor and each partnership establishment with two working partners.

**All employees**—Comprise all full-time and part-time employees on the payrolls of construction establishments, who worked or received pay for any part of the pay period including the 12th of March, May, August, and November. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included, but proprietors and partners of unincorporated firms are not.

All employees is the sum of all employees during the pay periods including the 12th of March, May, August, and November, divided by 4.

**Construction workers**—Includes all workers up through the working foreman level directly engaged in construction operations, such as painters, carpenters, plumbers, and electricians. Included are journeymen, mechanics, apprentices, laborers, truck drivers and helpers, equipment

operators, and on-site record keepers and security guards. Supervisory employees above the working foreman level are excluded from this category but are included in the "other employees" category.

**Other employees**—Includes employees in executive, purchasing, accounting, personnel, professional, technical activities, and routine office functions. Also included are supervisory employees above the working foreman level.

**Construction worker hours**—Includes the total number of hours worked by construction workers. Construction worker hours were collected for each of the four quarters of 1987.

**Payroll**—Includes the gross earnings paid in the calendar year 1987 to all employees on the payroll of construction establishments. It includes all forms of compensation such as salaries, wages, commissions, dismissal pay, bonuses, vacation and sick leave pay, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation, but excludes payments to the proprietor or partners, if an unincorporated concern.

**Employer costs for fringe benefits (supplemental labor costs)**—Represents expenditures made by the employer during 1987 for legally required and voluntary fringe benefit programs for employees.

**Legally required contributions**—Include Social Security contributions, unemployment compensation, workman's compensation, and State temporary disability payments.

**Voluntary payments**—Include life insurance premiums, pension plans, insurance premiums on hospital and medical plans, welfare plans, and union negotiated benefits.

Dollar value of business done comprises the following detail:

**Value of construction work done**—Includes all value of construction work done during 1987 for construction work performed by general contractors, special trades contractors, subcontractors, and land development and improvement work. Included is new construction, additions and alterations or reconstruction, and maintenance and repair construction work. Also included is the value of any construction work done by the reporting establishments for themselves.



Builders were instructed to include the value of buildings and other structures built or being built for sale in 1987 but not sold. They were to include the costs of such construction plus normal profit. Also included is the cost of construction work done on buildings for rent or lease.

Establishments engaged in the sale and installation of such construction components as plumbing, heating, and central air conditioning supplies and equipment; lumber and building materials; paint, glass, and wallpaper; and electrical and wiring supplies, elevators or escalators, etc., were instructed to include both the value for the installation and the receipts covering the price of the items installed.

Excluded was the cost of industrial and other specialized machinery and equipment which are not an integral part of a structure.

**Land receipts**—Includes receipts from the sale of land, whether held for sale or sold in connection with the sale of houses and other structures. It excludes the value of any improvements made to the land prior to the sale. (That value was to be included in the value of construction work done.)

**Other business receipts**—Includes business receipts not reported as value of construction work done or land receipts. The item includes business receipts from retail and wholesale trade, rental of equipment, manufacturing, transportation, legal service, insurance, finance, rental of property and other real estate operations, and other nonconstruction activities. Receipts for separately definable architectural and engineering work for others are also included here.

Excluded was the value of construction work done and receipts from other business operations in foreign countries and non-operating income such as interest and dividends.

**Net value of construction work**—Derived for each establishment by subtracting the costs for construction work subcontracted to others from the value of construction work done. (For a further explanation see "Duplication in Value of Construction Work" section in the Introduction.)

**Value added**—Derived for each establishment, value added is equal to dollar value of business done, less costs for construction work subcontracted to others, and costs for materials, components, supplies and fuels. For SIC 6552 and SIC 1531, for which land receipts are significant, land receipts are also subtracted from dollar value of business done. (For a further explanation see "Duplication in Value of Construction Work" section in the Introduction.)

**Selected costs**—Represents the costs for materials, components, and supplies; costs for construction work subcontracted to others; and costs for selected power, fuels, and lubricants. Capital expenditures and rental costs for machinery, equipment, and structures are shown elsewhere.

Costs for materials, components, and supplies include:

- total costs to reporting establishments during 1987 for the purchase of all materials, components, and supplies, except fuels. (Supplies include expendable tools which are charged to current accounts.)
- freight and other direct charges should represent only amount paid after discounts, and the value of materials, components, and supplies obtained from other establishments of the respondent's company.
- costs for materials, components, and supplies used by the reporting establishments in the construction or reconstruction of buildings/structures for themselves which are chargeable to their fixed assets accounts, are included in this item as are costs for materials bought and resold to others.
- costs made for direct purchases of materials, components, and supplies even though the purchases were subsequently provided to subcontractors for their use.

Excluded from this item are:

- industrial and other specialized machinery and equipment, such as printing presses; computer systems; etc., which are not an integral part of a structure
- materials furnished to contractors by the owners of projects.

Costs for construction work subcontracted to others include:

- all costs during 1987 for construction work subcontracted out to other construction contractors.

Excluded from this item are:

- The costs to the reporting establishment for its purchases of materials, components, and supplies, provided to a subcontractor for his use. Such costs are reported under a separate category, "costs for materials, components, and supplies."
- costs for the rental of machinery or equipment.

Costs for selected power, fuels, and lubricants include:

- costs for fuels, lubricants, and electric energy purchased during the year from other companies, or received from other establishments of the company.
- costs for natural and manufactured gas, fuel oil, coal and coke products, etc.

**Rental costs for machinery, equipment, and buildings**—Includes all costs during 1987 for renting or leasing construction machinery and equipment, transportation equipment, production equipment, office equipment, furniture and fixtures, scaffolding, office space, and buildings. It



excludes costs for the rental of land. It also excludes costs under agreements which, in effect, are conditional sales contracts such as capital leases. Such costs are included in “capital expenditures.”

**Selected purchased services**—Includes all costs during 1987 for communication services purchased from other companies or from other establishments of the company. It also includes the cost of all repairs made to structures and equipment by outside companies, or from other establishments of the same company. It includes only the cost of that repair necessary to maintain property and equipment. It excludes the cost of improvements that increase the value of property, or the cost of adapting it for another use. Such costs are included in “capital expenditures”.

**Assets and depreciation**—Refers to the original cost of all fixed tangible assets such as buildings and other structures (offices, shops, etc.); stationary machinery (generators, shop equipment, etc.); mobile machinery (tractors, trucks, etc.); and other equipment (office furniture and fixtures, etc.). Not included are such items as current assets, depletable assets, intangible assets, and nondepreciable assets.

Data on assets and depreciation were collected separately for: (1) buildings and other structures, additions, and related facilities; and, (2) machinery and equipment.

Respondents were also asked to report capitalized expenditures, depreciation charges, and the gross value of assets sold, retired, scrapped, destroyed, etc., during 1987.

**Capital expenditures**—Refers to all costs actually incurred during 1987 which were or would be chargeable to the fixed assets accounts of the reporting establishments and which were of the type for which depreciation accounts are ordinarily maintained. These expenditures cover the acquisition, the construction, and the major alteration of the reporting establishment’s own buildings and other structures, whether purchased, constructed under contract, or constructed by the reporting establishment’s own forces; and the acquisition of machinery and equipment.

If leasing arrangements met the criteria set down by the Financial Accounting Standards Board (FASB) for a capital lease, respondents were instructed to report the original cost or market value of that equipment or building as a fixed asset and capital expenditure if acquired during 1987.

If capital expenditures were not recorded directly at the establishment level but handled centrally at the company or division level, respondents were requested to report appropriate estimates for the individual establishments.

**Inventories**—Includes all of the materials and supplies that are owned regardless of where they are held. Excludes materials which are owned by others, but held by the reporting establishment.

Builders who built on their own account for sale were requested to report work in progress and finished units not sold for buildings and other structures built for sale.

Inventories of multi-establishment companies were instructed to be reported by the establishment that is responsible for the inventories even if these inventories were held at a separate location.

**Ownership of construction projects**—This item shows the distribution of the value of construction work done by ownership of the project, that is, Government owned or privately owned. This classification relates to the ownership of the projects or work undertaken during the construction phase. Government owned projects are shown separately for Federal, and State and local governments.

**Value of construction work subcontracted in from others**—Includes the value of construction work during 1987 for work done by reporting establishments for other construction contractors or builders. Establishments were asked to report the approximate percent of total value of construction work accounted for by such work, and the percentages reported were applied to the reported value of construction work to develop a value for this item.

**Types of construction**—This item provides data by the types of buildings, structures, or other facilities being constructed or worked on by construction establishments in 1987. Respondents were instructed that each building, structure, or other facility should be classified in terms of its function. For example, a restaurant building was to be classified in the restaurant category whether it was designed as a commercial restaurant building or an auxiliary unit of an educational institution. If respondents worked on more than one type of building or structure in a multibuilding complex, they were instructed to report separately for each building or type of structure. If they worked on a building that had more than one purpose, i.e, office and residential, or commercial, they were to classify the building by major purpose.

In addition all respondents were requested to report the percentage of the value of construction work done for new construction, additions, alterations, or reconstruction, and maintenance and repair work for each of these types. See the definition of “Construction” for the meanings of these terms.

Building construction:

- **Single-family houses, detached**—Includes all residential buildings constructed for one family use.
- **Single-family houses, attached (include townhouses)**—Includes all residential buildings with two or more living quarters side by side, completely independent of one another, and separated by an unbroken wall from ground to roof.
- **Apartment buildings with two or more apartments**—Includes high-rise, low-rise, or any structures containing two or more housing units (excluding attached single-family houses and townhouses described above).
- **Hotels and motels**—Includes hotels, motels, and tourist cabins intended for transient accommodations.



- **Other residential buildings**—Includes dormitories, fraternity and sorority houses, nurses homes, and other nonhousekeeping residential structures.
- **Office buildings**—Includes all buildings which are used primarily for office space or for government administrative offices. Also included are banks or financial buildings which are three stories or more.
- **Other commercial buildings, such as stores, restaurants, and automobile service stations**—Includes all buildings which are intended for use primarily in the wholesale, retail, and service trades. For example, shopping centers, department stores, drug stores, restaurants, public garages, auto service stations, and one or two story bank or financial institutions.
- **Industrial buildings**—Includes all industrial buildings and plants which are used to house production and assembly activities. Heavy industrial facilities such as blast furnaces, petroleum refineries, chemical complexes, etc., are not included in this category, but under nonbuilding construction.
- **Warehouses**—Includes commercial warehouses, cold storage plants, grain elevators, mini-warehouses, and other such storage buildings.
- **Religious buildings**—Includes all buildings which are intended for religious services or functions, such as churches, synagogues, convents, monasteries, and seminaries.
- **Educational buildings**—Includes all buildings which are used directly in administrative and instructional activities, such as colleges, universities, elementary and secondary schools, correspondence, commercial, and trade schools. Libraries, museums, and art galleries, as well as laboratories which are not a part of a manufacturing establishment, are also included.
- **Hospitals and institutional buildings**—Includes all buildings which are intended to provide hospital and institutional care, such as clinics, infirmaries, sanitariums, nursing homes, homes for the aged, and orphanages.
- **Farm buildings, nonresidential**—Includes nonresidential farm buildings such as barns, poultry houses, implement sheds, and farm silos.
- **Amusement, social, and recreational buildings**—Includes buildings which are used primarily for entertainment, social and recreational activities, such as sports arenas, theaters, music halls, golf and country club buildings, skating rinks, bowling alleys, and indoor swimming pools.
- **Other nonresidential buildings**—Includes nonresidential buildings which are not classified elsewhere, such as fire stations, prisons, civic centers, bus and air passenger terminals and hangars.

#### Nonbuilding construction:

- **Highways, streets and related work, such as installation of guardrails, highway signs, etc.**—Includes streets, roads, alleys, sidewalks, curbs and gutters, culverts, right-of-way drainage, erosion control and lighting. Also includes earthwork protective structures when used in connection with road improvements.
- **Outdoor swimming pools**—Includes wading pools and reflecting pools.
- **Recreational facilities**—Includes athletic fields, golf courses, outdoor tennis courts, trails, and camps.
- **Bridges and elevated highways**—Includes viaducts and overpasses; roads, highways, railroads, and causeways built on structural supports.
- **Tunnels**—Includes highway, pedestrian, and railroad tunnels.
- **Railroad construction**—Includes the construction of railroad beds, tracks, freight yards, and signal towers.
- **Subway construction**—Includes urban mass transit subway systems above or below ground.
- **Dam and reservoir construction**—Includes hydroelectric, water supply, and flood control dams and reservoirs.
- **Marine construction**—Includes dredging, underwater rock removal, breakwaters, navigational channels, jetties, and locks.
- **Harbor and port facilities**—Includes docks, piers, and wharves.
- **Conservation and development construction**—Includes land reclamation, irrigation projects, drainage canals, levees, and flood control projects.
- **Power and communication transmission lines, towers, and related facilities**—Includes electric power lines, telephone and telegraph lines, fiber optic cables, cable television lines, television and radio towers, electric light and power facilities.
- **Power plants, except nuclear**—Includes electric and steam generating plants.
- **Power plants, nuclear**—Includes atomic energy plants, and nuclear reactors.
- **Sewers, sewerlines, and related facilities**—Includes sanitary and storm sewers, and related facilities.
- **Sewage treatment plants**—Includes sewage treatment and waste disposal plants.
- **Water mains and related facilities**—Includes water supply systems and related facilities.



- **Water treatment plants**—Includes water filtration and water softening plants.
- **Pipeline construction other than sewer or waterlines**—Includes pipelines for the transmission of gas, petroleum products, and liquefied gases.
- **Blast furnaces, petroleum refineries, chemical complexes, etc.**—Includes coke ovens, and mining appurtenances such as tipples and washeries.
- **Other nonbuilding construction**—Includes all types of nonbuilding construction, not included elsewhere.





## APPENDIX B.

### Standard Industrial Classification Titles for Industry Groups and Industries

SIC code	Industry titles	SIC code	Industry titles
<b>15</b>	<b>BUILDING CONSTRUCTION—GENERAL CONTRACTORS AND OPERATIVE BUILDERS</b>	<b>17</b>	<b>CONSTRUCTION—SPECIAL TRADE CONTRACTORS—Con.</b>
<b>152</b>	<b>General Building Contractors—Residential Buildings</b>	<b>173</b>	<b>Electrical Work Special Trade Contractors</b>
1521	General Contractors—Single-Family Houses	1731	Electrical Work Special Trade Contractors
1522	General Contractors—Residential Buildings, Other Than Single-Family	<b>174</b>	<b>Masonry, Stone Work Tile Setting, and Plastering Special Trade Contractors</b>
<b>153</b>	<b>Operative Builders</b>	1741	Masonry, Stone Setting, and Other Stone Work Special Trade Contractors
1531	Operative Builders	1742	Plastering, Drywall, Acoustical, and Insulation Work Special Trade Contractors
<b>154</b>	<b>General Building Contractors—Nonresidential Buildings</b>	1743	Terrazzo, Tile, Marble, and Mosaic Work Special Trade Contractors
1541	General Contractors—Industrial Buildings and Warehouses	<b>175</b>	<b>Carpentry and Floor Work Special Trade Contractors</b>
1542	General Contractors—Nonresidential Buildings, Other Than Industrial Buildings and Warehouses	1751	Carpentry Work Special Trade Contractors
<b>16</b>	<b>HEAVY CONSTRUCTION OTHER THAN BUILDING CONSTRUCTION—CONTRACTORS</b>	1752	Floor Laying and Other Floor Work Special Trade Contractors, Not Elsewhere Classified
<b>161</b>	<b>Highway and Street Construction, Except Elevated Highways</b>	<b>176</b>	<b>Roofing, Siding, and Sheet Metal Work Special Trade Contractors</b>
1611	Highway and Street Construction Contractors, Except Elevated Highways	1761	Roofing, Siding, and Sheet Metal Work Special Trade Contractors
<b>162</b>	<b>Heavy Construction, Except Highway and Street Construction</b>	<b>177</b>	<b>Concrete Work Special Trade Contractors</b>
1622	Bridge, Tunnel, and Elevated Highway Construction Contractors	1771	Concrete Work Special Trade Contractors
1623	Water, Sewer, Pipeline, and Communications and Powerline Construction	<b>178</b>	<b>Water Well Drilling Special Trade Contractors</b>
1629	Heavy Construction, Not Elsewhere Classified	1781	Water Well Drilling Special Trade Contractors
<b>17</b>	<b>CONSTRUCTION—SPECIAL TRADE CONTRACTORS</b>	<b>179</b>	<b>Miscellaneous Special Trade Contractors</b>
<b>171</b>	<b>Plumbing, Heating, and Air-Conditioning Special Trade Contractors</b>	1791	Structural Steel Erection Special Trade Contractors
1711	Plumbing, Heating, and Air-Conditioning Special Trade Contractors	1793	Glass and Glazing Work Special Trade Contractors
<b>172</b>	<b>Painting and Paper Hanging Special Trade Contractors</b>	1794	Excavation Work Special Trade Contractors
1721	Painting and Paper Hanging Special Trade Contractors	1795	Wrecking and Demolition Work Special Trade Contractors
		1796	Installation or Erection of Building Equipment, Special Trade Contractors, Not Elsewhere Classified
		1799	Special Trade Contractors, Not Elsewhere Classified
		<b>6552</b>	<b>LAND SUBDIVIDERS AND DEVELOPERS, EXCEPT CEMETERIES</b>





# **APPENDIX C.**

## **Geographic Divisions and States**

### **NEW ENGLAND STATES**

Connecticut  
Maine  
Massachusetts  
New Hampshire  
Rhode Island  
Vermont

### **MIDDLE ATLANTIC STATES**

New Jersey  
New York  
Pennsylvania

### **EAST NORTH CENTRAL STATES**

Illinois  
Indiana  
Michigan  
Ohio  
Wisconsin

### **WEST NORTH CENTRAL STATES**

Iowa  
Kansas  
Minnesota  
Missouri  
Nebraska  
North Dakota  
South Dakota

### **SOUTH ATLANTIC STATES**

Delaware  
District of Columbia  
Florida  
Georgia  
Maryland

### **SOUTH ATLANTIC STATES—Con.**

North Carolina  
South Carolina  
Virginia  
West Virginia

### **EAST SOUTH CENTRAL STATES**

Alabama  
Kentucky  
Mississippi  
Tennessee

### **WEST SOUTH CENTRAL STATES**

Arkansas  
Louisiana  
Oklahoma  
Texas

### **MOUNTAIN STATES**

Arizona  
Colorado  
Idaho  
Montana  
Nevada  
New Mexico  
Utah  
Wyoming

### **PACIFIC STATES**

Alaska  
California  
Hawaii  
Oregon  
Washington





# PUBLICATION PROGRAM

## 1987 CENSUS OF CONSTRUCTION INDUSTRIES

The Census of Construction Industries is taken once every 5 years. The census covers all establishments engaged in construction, including:

- Building contractors
- Heavy construction contractors
- Special trade contractors (including plumbers, carpenters, painters, electricians)
- Land developers and subdividers

Data products in the Census of Construction Industries are issued in 4 publication series and in 3 other media:

- Printed reports [P]
- CD-ROM [C]
- Computer tape [T]
- Highlights online [ + ]

## Preliminary Industry Series (CC87-I-1(P) through CC87-I-28(P))

(Available November 1988 through May 1989) [P]

Twenty-seven separate industry reports and a United States summary report, providing national statistics for establishments with payroll. Statistics shown for 1987 include:

- Number of establishments
- Number of employees
- Payroll
- Hours worked
- Value of construction work done, by type of structure
- Selected operating costs

## Final Industry Series (CC87-I-1 through CC87-I-28)

(Available June 1989 through November 1989) [P] [C] [T] [ + ]

Twenty-seven separate industry reports and a United States summary report, providing statistics for the Nation and individual States on establishments with payroll. These reports update figures from the preliminary industry series (employment, payroll, value of construction, etc.) and provide measures of the following:

- Capital expenditures
- Inventories
- Industry profiles
- Assets
- Depreciation
- And much more

## Geographic Area Series (CC87-A-1 through CC87-A-10)

(Available January 1990 through March 1990) [P] [C] [T] [ + ]

Nine reports on the construction industries, representing each census geographic division, and a United States summary report. Regional reports provide detailed data for States and metropolitan statistical areas.

## Subject Report—Legal Form of Organization and Type of Operation (CC87-S-1)

(Available May 1990) [P]

One report providing selected national statistics for each industry by legal form of organization and type of operation. This report includes data for establishments with and without payroll. Data in this report include—

- Employment
- Payroll
- Value of construction work done
- Selected operating costs

## OTHER ECONOMIC CENSUSES REPORTS

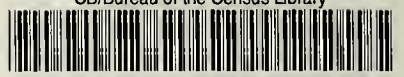
The Census of Construction Industries is part of the 1987 Economic Censuses. These are conducted at five-year intervals in years ending in 2 and 7 and consist of seven separate censuses:

- Census of Retail Trade
- Census of Wholesale Trade
- Census of Service Industries
- Census of Transportation
- Census of Manufactures
- Census of Mineral Industries
- Census of Construction

...plus several related programs: enterprise statistics; information on minority-owned and women-owned businesses; and the Census of Outlying Areas, including separate economic censuses of Puerto Rico and other outlying areas. The Census of Agriculture and Census of Governments are conducted separately.

## HOW TO ORDER DATA PRODUCTS

Order forms for the specific reports and other data products may be obtained from Data User Services Division, Customer Services (Publications), Bureau of the Census, Washington, DC 20233. If you have any questions, call Census Customer Services 1-(301)-763-4100.



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CC87-1-10 Plumbing, Heating, and Air-Conditioning Special Trade Contractors

1987 Census of U

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